

FINAL REPORT NUMBER 225-MGA-03-008

SAFETY COMPLIANCE TESTING FOR FMVSS 225
“Child Restraint Anchorage Systems”

2003 MAZDA PROTÉGÉ 5
NHTSA No. C35400

MGA RESEARCH CORPORATION
446 Executive Drive
Troy, Michigan 48083



Test Date: August 26 & September 2, 2003
Report Date: October 9, 2003

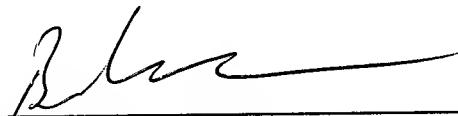
FINAL REPORT


PREPARED FOR:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW
ROOM 6111 (NVS-221)
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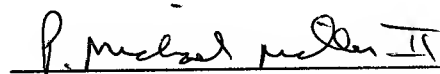
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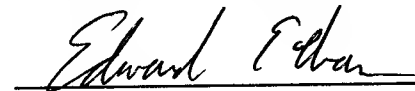


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16. Abstract Compliance testing was conducted on the subject 2003 Mazda Protégé 5, NHTSA No. C35400, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-225T & 225L for the determination of FMVSS 225 compliance. The tests were conducted at MGA Research Corporation in Troy, Michigan on August 26 & September 2, 2003. Test failures identified were as follows: <p style="text-align: center;">NONE</p> The data recorded indicates that the 2003 Mazda Protégé 5 tested appears to comply with the requirements for FMVSS 225, set forth by the National Highway Traffic Safety Administration.			
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1.0 PURPOSE AND PROCEDURE

PURPOSE

The child restraint anchorage test results presented in this report are part of the Federal Motor Vehicle Safety Standard (FMVSS) No. 225 compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by MGA Research Corporation (MGA) under Contract No. DTNH22-02-D-11043. The purpose of the testing was to determine if the subject vehicle, a 2003 Mazda Protégé 5, NHTSA No. C35400 meets the performance requirements of FMVSS No. 225, "Child Restraint Anchorage Systems."

PROCEDURE

These tests were conducted in accordance with NHTSA's Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedures, TP-225T (5/3/01) and TP-225L (6/11/01), and MGA's Laboratory Test Procedure, MGATP225GOV (3/20/03).

The front occupant compartment consisted of two (2) adjustable outboard bucket seats and the rear occupant compartment consisted of a three-passenger 60/40 split back bench seat. Each rear outboard seating position was equipped with a child restraint anchorage system (one tether and two lower anchors). The rear center seating position was equipped with a tether anchorage only. The center-to-center spacing between the two rear outboard lower anchorage systems was approximately 640 mm. The lower anchorages for both rear outboard seating positions were tested with SFAD 2 fixtures and the tether anchorage at each rear seating position was tested with a high strength tether strap.

2.0 COMPLIANCE TEST AND DATA SUMMARY

TEST SUMMARY

The tests were conducted at MGA, Troy, Michigan on August 26 & September 2, 2003.

Based on the test results, the 2003 Mazda Protégé 5 appeared to meet the performance requirements of FMVSS No. 225 for these tests.

The SFAD 2 at the rear left seating position sustained a maximum force of 10,977 N and held the required load for 11 seconds with a total displacement of 41 mm, measured at Point "x". The SFAD2 at the rear right seating position sustained a maximum force of 11,008 N and held the required load for 11 seconds with a total displacement of 38 mm, measured at Point "x". The rear center seating position tether sustained a maximum force of 5,385 N and held the required load for 3 seconds. The rear seating position tether sustained a maximum force of 5,467 N and held the required load for 3 seconds. The rear right seating position tether sustained a maximum force of 5,383 N and held the required load for 3 seconds. The applied maximum forces and the measured displacements are provided in Table 1.

DATA SUMMARY

Strength and displacement summary data are provided below, and data for the configuration and the location of each child restraint anchorage system are provided in Section 5.0. Photographs are found in Section 6.0 and test plots are found in Section 7.0.

Table 1. Summary Data for Strength and Displacement

MGA Test #	Fixture Type	Seating Position	Max. Load (N)	Displacement (mm)
SB3466	SFAD II	Rear Left	10,977	41
		Rear Right	11,008	38
SB3467	Tether Strap	Rear Left Tether	5,467	N/A
		Rear Right Tether	5,382	N/A
SB3468	Tether Strap	Rear Center Tether	5,385	N/A

-- N/A indicates that the displacement criteria does not apply to the test.

3.0 TEST VEHICLE INFORMATION

Table 2. General Test and Vehicle Parameter Data

VEH. MOD YR/MAKE/MODEL/BODY	2003 Mazda Protégé 5
VEH. NHTSA NO.	C35400
VIN	JM1BJ225X30148560
COLOR	Black Mica
VEH. BUILD DATE	11/02
TEST DATE	August 26 & September 2, 2003
TEST LABORATORY	MGA Research Corporation
OBSERVERS	Brad Reaume

GENERAL INFORMATION:

Date Received: 8/2/03 Odometer Reading: 51 miles

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Mazda Motor Corporation

Date of Manufacture: 11/02; VIN: JM1BJ225X30148560

GVWR: 1653 kg; GAWR FRONT: 883 kg

GAWR REAR: 780 kg

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 220 kpa REAR: 220 kpa

Recommended Tire Size: P195/55R15

Recommended Cold Tire Pressure:

FRONT: 220 kpa REAR: 220 kpa

Size of Tire on Test Vehicle: P195/55R15

VEHICLE CAPACITY DATA:

Type of Front Seats:	Bench ____;	Bucket <u>X</u> ;	Split Bench _____
Number of Occupants:	Front <u>2</u> ;	Rear <u>3</u> ;	<u>5</u> Total

4.0 TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

MGA Research Corporation 446 Executive Drive Troy, Michigan 48083	
Test Equipment Used for Testing	Calibration Due Date
MGA Hydraulic Test Frame	N/A
Two (2) Load Cells 3,000 lb Capability	S/N 259 11/23/03 & S/N 117 11/23/03
Two (2) String Potentiometers (S/N 18385 & 18386)	Calibrated at each use
Hydraulic Pump	N/A
MGA CRF Fixture	N/A
MGA SFAD2	N/A
MGA H-point Machine	N/A
MGA 2-Dimensional Template	N/A
Linear Scale	6/3/04 (S/N 219)
MGA Data Acquisition System	N/A
Three (3) Hydraulic Cylinders	N/A
Calipers	2/14/04 (S/N DCL002)
Force Gauge	10/11/03 (S/N FRG001)
Inclinometer (Digital)	6/18/04 (S/N DGP008)

5.0 DATA

Table 3. Child Restraint Tether Anchorage Configuration (Data Sheet 1)

Seating Position		Permit the attachment of a tether hook	Accessible without the need for any tool other than a screwdriver or coin	Ready for use without the need for any tools	Sealed to prevent the entry of exhaust fumes
Front Row		N/A	N/A	N/A	N/A
Second Row	LH	Yes	Yes	Yes	Yes
	Ctr.	Yes	Yes	Yes	Yes
	RH	Yes	Yes	Yes	Yes
Third Row		N/A	N/A	N/A	N/A

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225L & 225T.

REMARKS: NONE

Table 4. Child Restraint Lower Anchorage Configuration (Data Sheet 2)

OBSERVED LOWER ANCHORAGE CONFIGURATION	SEAT POSITION				
		FRONT ROW	SECOND ROW		THIRD ROW
			I/B	O/B	
Above anchorage, permanently marked with a circle not less than 13 mm in Dia.; and whose color contrasts with its background; and its center is not less than 50 mm and not more than 75 mm above the bar, and in the vertical longitudinal plane that passes through the center of the bar.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Each of the bars is visible, without the compression of the seat cushion or seat back, when the bar is viewed, in a vertical longitudinal plane passing through the center of the bar, along a line marking an upward 30 degree angle with a horizontal plane.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Diameter of the bar (mm)	LH	N/A	6.1	6.1	N/A
	Ctr		N/A		
	RH		6.0	6.0	
Inspect if the bars are straight, horizontal and transverse	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Optional Marking: At least one anchorage bar (when deployed for use, if storable anchorages), one guidance fixture, or one seat marking is visible.	LH	N/A	N/A		N/A
	Ctr				
	RH				
Optional Marking: If guidance fixtures are used, the fixture(s) must be installed.	LH	N/A	N/A		N/A
	Ctr				
	RH				
Measure the distance between Point “Z” of the CRF and the center of the anchorage bar (mm)	LH	N/A	34	30	N/A
	Ctr		N/A		
	RH		30	33	
Measure the distance between the SRP to the center of the anchorage bar (mm)	LH	N/A	128		N/A
	Ctr		N/A		
	RH		128		

Table 4. Child Restraint Lower Anchorage Configuration (Data Sheet 2) (continued)

OBSERVED LOWER ANCHORAGE CONFIGURATION	SEAT POSITION				
		FRONT ROW	SECOND ROW		THIRD ROW
			I/B	O/B	
Inspect if the centroidal longitudinal axes are collinear within 5 degrees	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Inspect if the inside surface of the bar that is straight and horizontal section of the bars, and determine they are not less than 25 mm, but not more than 40 mm in length (mm).	LH	N/A	30	35	N/A
	Ctr		N/A		
	RH		30	35	
Inspect if the bars can be connected to, over their entire inside length by the connectors of child restraint system.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Measure the distance between the center of the length of one bar to the center of the length of the other bar. The requirement is 280 mm ± 1 mm (mm).	LH	N/A	280		N/A
	Ctr		N/A		
	RH		280		
Inspect if the bars are an integral and permanent part of the vehicle.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Inspect if the bars are rigidly attached to the vehicle. If feasible, hold the bar firmly with two fingers and gently pull.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		

PITCH, YAW, & ROLL INFORMATION

SEAT POSITION	PITCH (deg)	YAW (deg)	ROLL (deg)
LH	17	No Data	2
Ctr.	N/A		N/A
RH	17		2

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225L & 225T.

REMARKS: NONE

Table 5. Tether Location and Dimensional Measurements (Data Sheet 3)

SEAT POSITION FOR TETHER		TETHER ANCHORAGE LOCATION
		Located in the required zone?
Front Row	LH	N/A
	Ctr.	
	RH	
Second Row	LH	Yes
	Ctr.	Yes
	RH	Yes
Third Row	LH	N/A
	Ctr.	
	RH	

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225L & 225T.

REMARKS: NONE

Table 6. Tether Anchorage Static Loading and Displacement (Data Sheet 5)

SEAT POSITION		Seat, Seat Back, & Head Restraint Positions			Type of SFAD used	Angle (deg)	Initial Location (mm)	Onset Rate (N/sec.)	Force Applied (N)	Max. Load (N)	Final Location (mm)	Horizontal Displ. (mm)
		Seat	Seat Back	Is There a Head Restraint ?								
Front Row	LH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Ctr.											
	RH											
Second Row	LH	Fixed	Fixed	No	N/A	-5	N/A	176	5,250	5,467	N/A	N/A
	Ctr.	Fixed	Fixed	No	N/A	-5	N/A	176	5,250	5,385	N/A	N/A
	RH	Fixed	Fixed	No	N/A	-5	N/A	176	5,250	5,383	N/A	N/A
Third Row	LH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Ctr.											
	RH											

Note: (1) AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225L & 225T.

REMARKS: Applied force exceeded force specified in the test procedure.

Table 7. Lower Anchorage Static Loading and Displacement (Data Sheet 6) With SFAD 2

SEAT POSITION		Seat, Seat Back, & Head Restraint Positions			Measured Angles		Initial Location (mm)	Onset Rate (N/sec.)	Force Applied (N)	Max. Load (N)	Final Location (mm)	Displ. (mm)
		Seat	Seat Back	Is There a Head Restraint?	Vertical (deg.)	Horizontal (deg.)						
Front Row	LH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Ctr.											
	RH											
Second Row	LH	Fixed	Fixed	No	N/A	10	32	389	11,000	10,977	73	41
	Ctr.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	RH	Fixed	Fixed	No	N/A	10	34	389	11,000	11,008	72	38
Third Row	LH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Ctr.											
	RH											

Note: (1) AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225L.
 (2) FORWARD FORCE APPLICATION

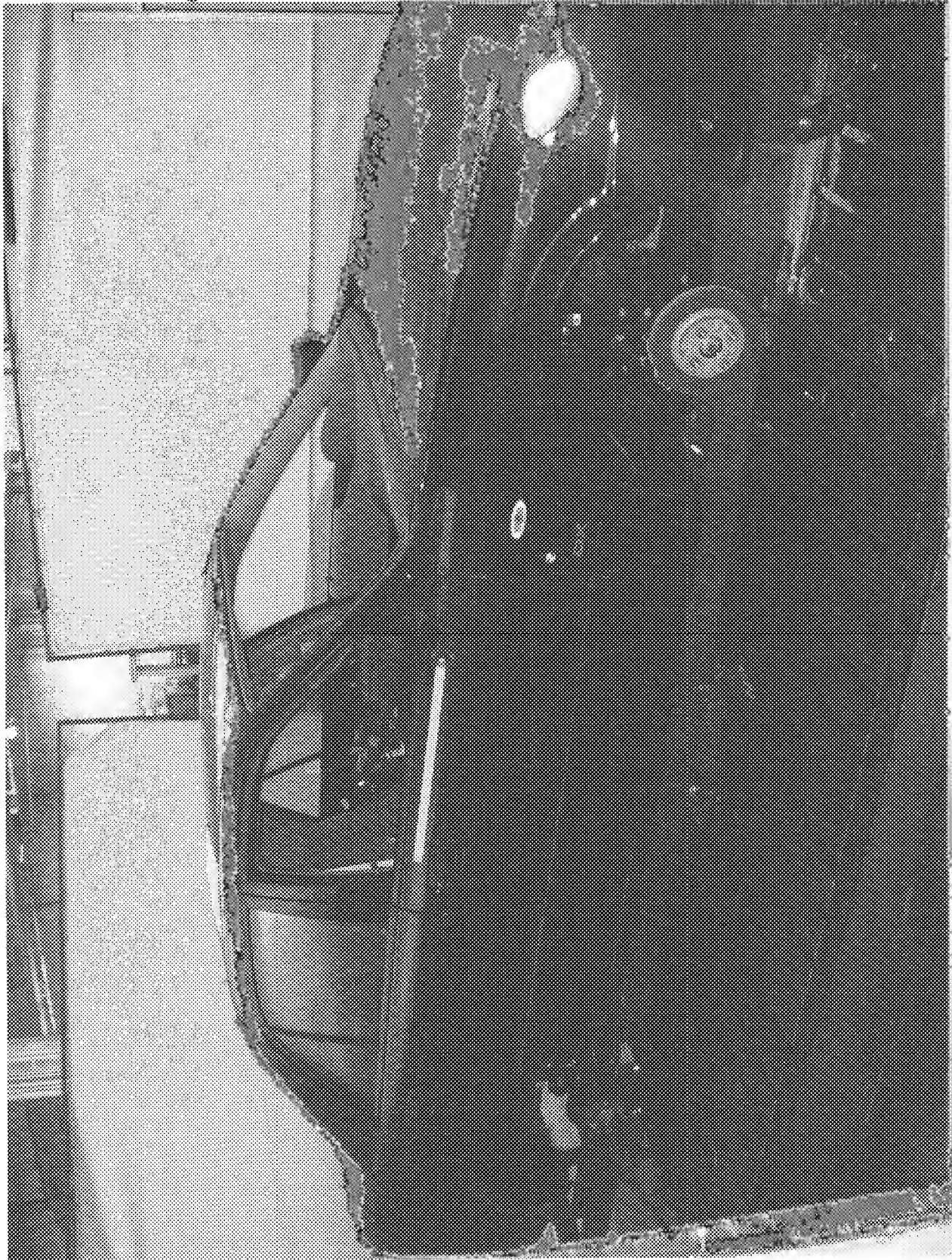
REMARKS: Applied force exceeded force specified in the test procedure.

6.0 PHOTOGRAPHS

6.1 Full rear view



6.2 $\frac{3}{4}$ right side view



MAZDA MOTOR CORPORATION

ENGINE FRT GAWR/PNBE RR

2000 CC 17 LB 1720 LB

253 KG 780 KG

VEHICLE SAFETY

ON

THE DATE OF MANUFACTURE

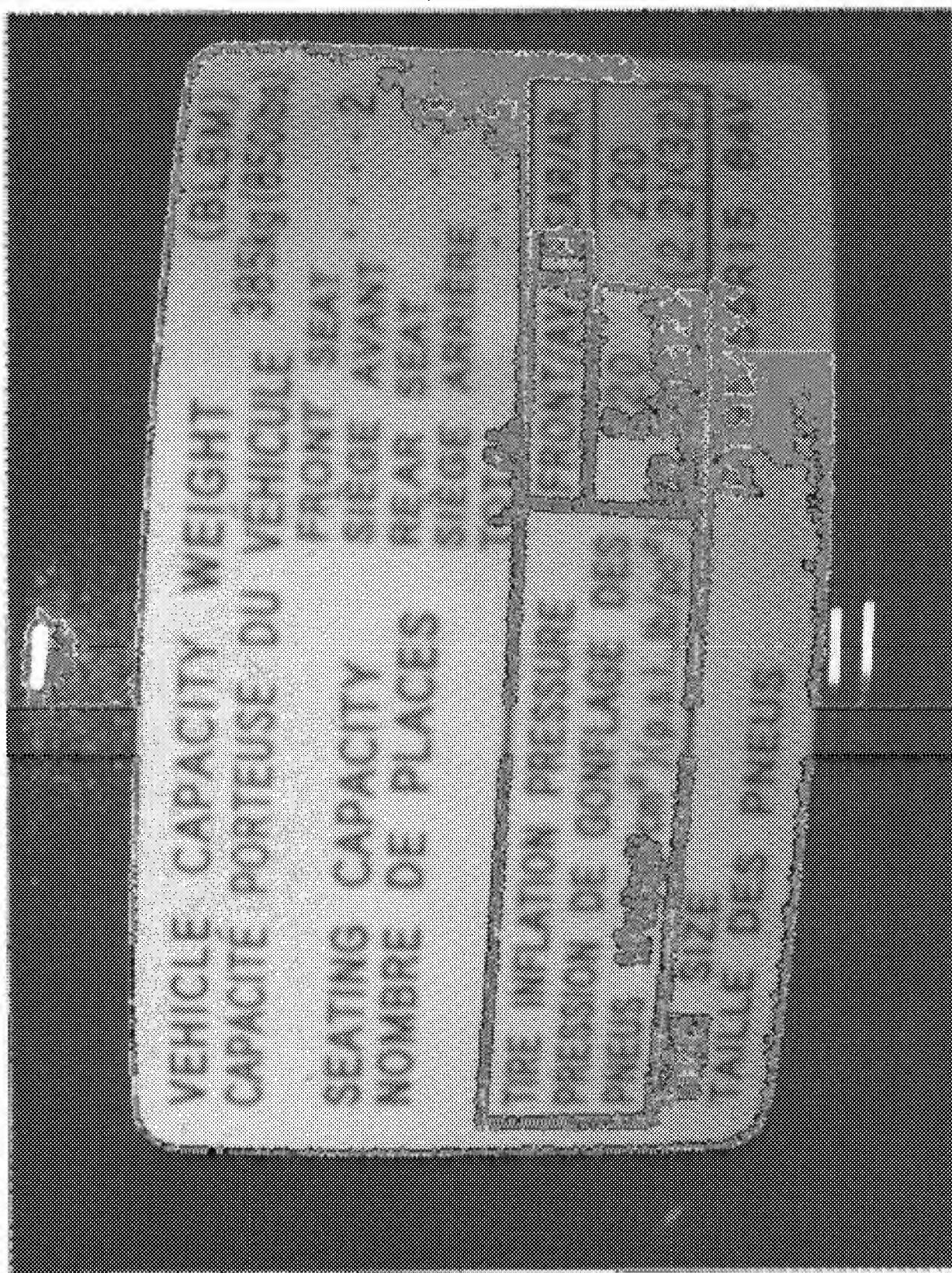
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PASSENGER

MADE IN JAPAN

BODY COLOR CODE: 16V

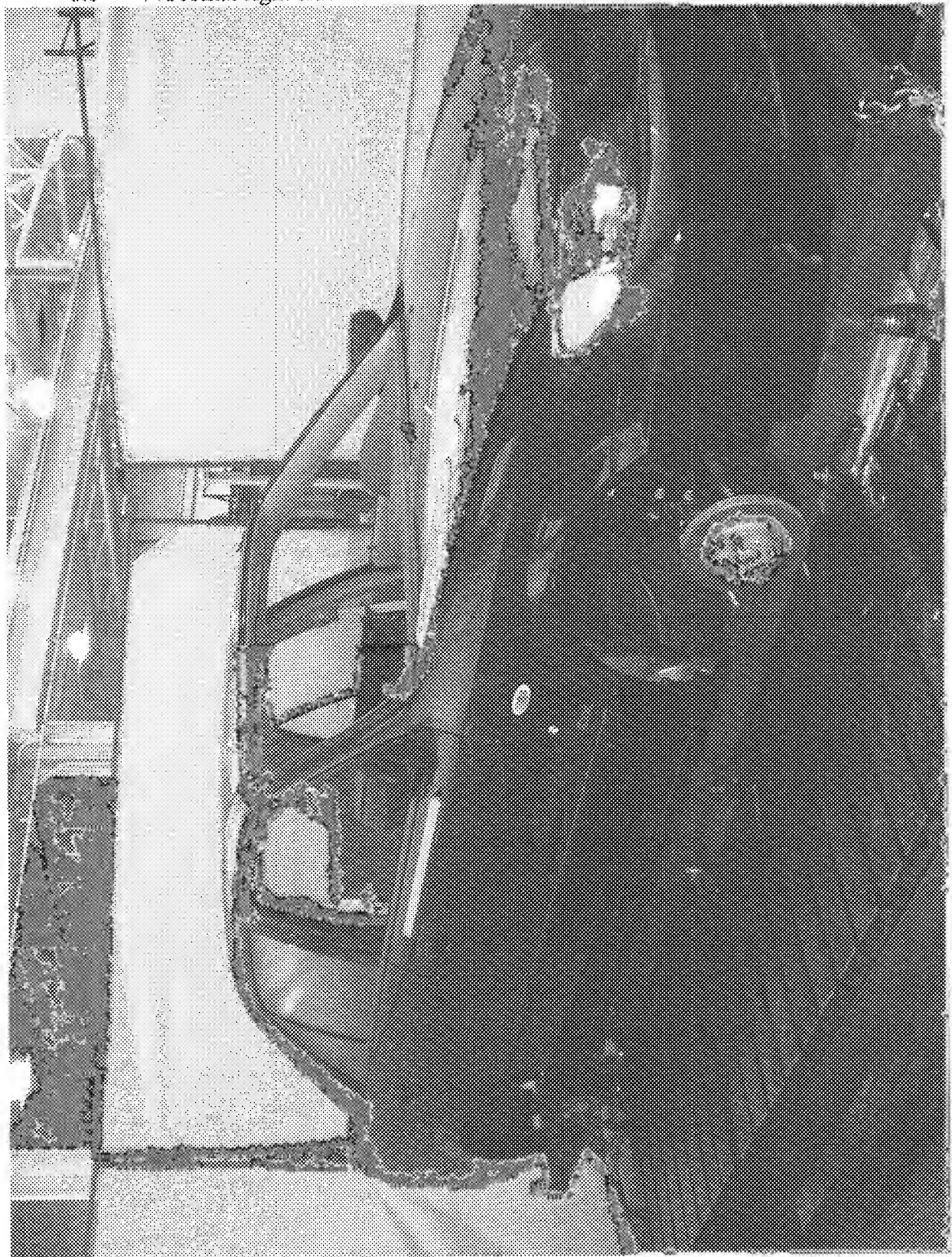
6.4 Test vehicle's tire information placard



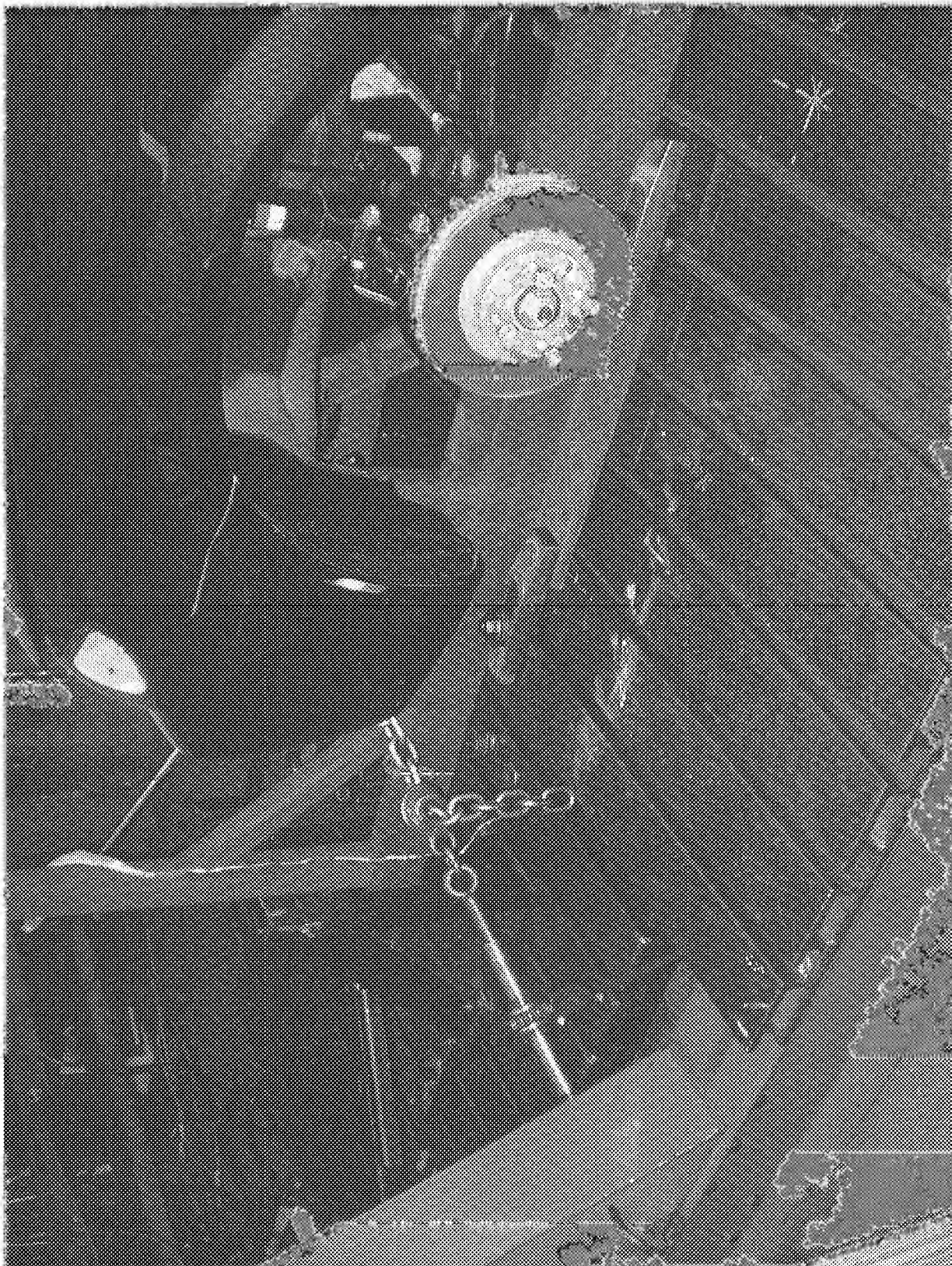
6.5 ¾ Frontal left side view of test vehicle



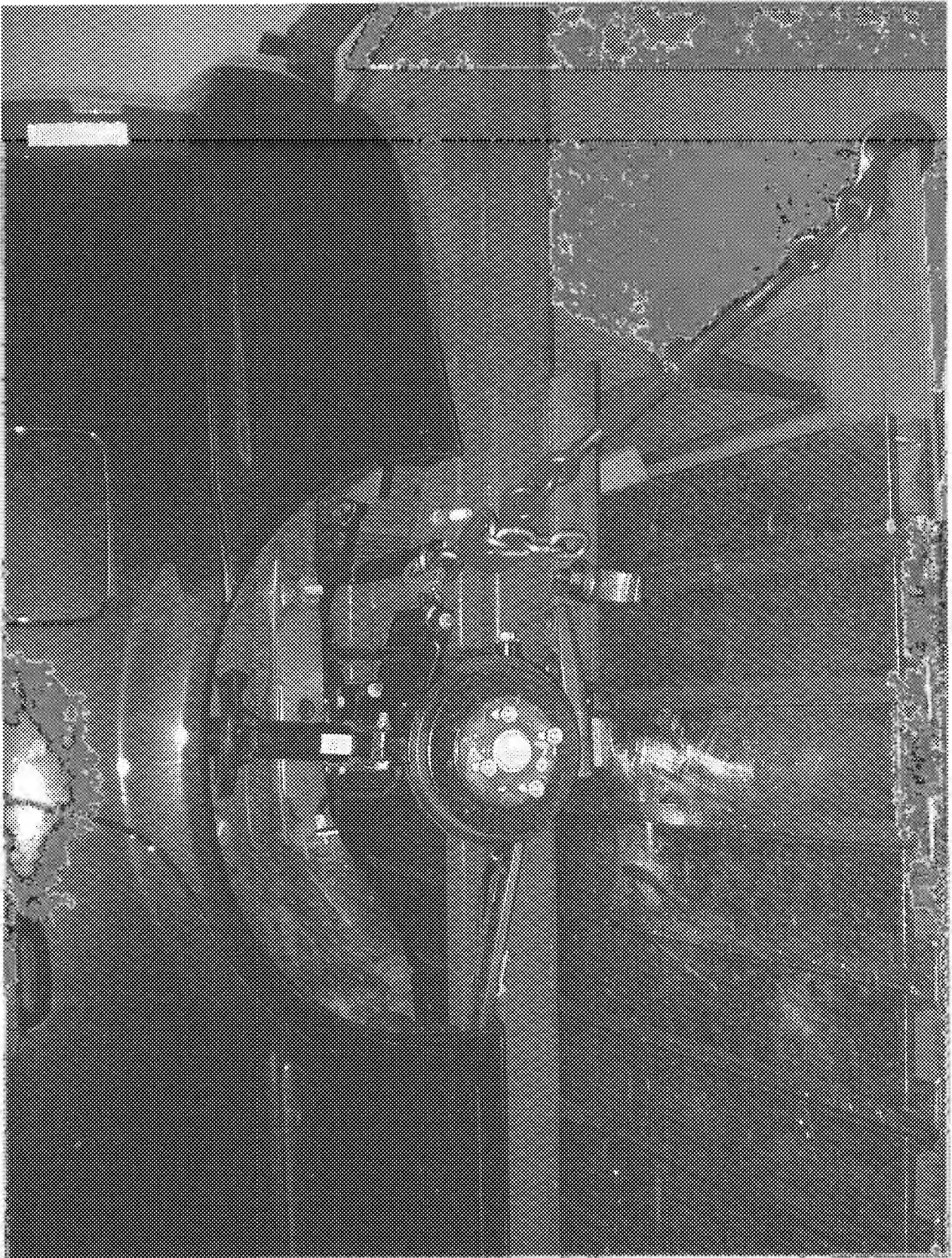
6.6 ¾ Frontal right side view of test vehicle



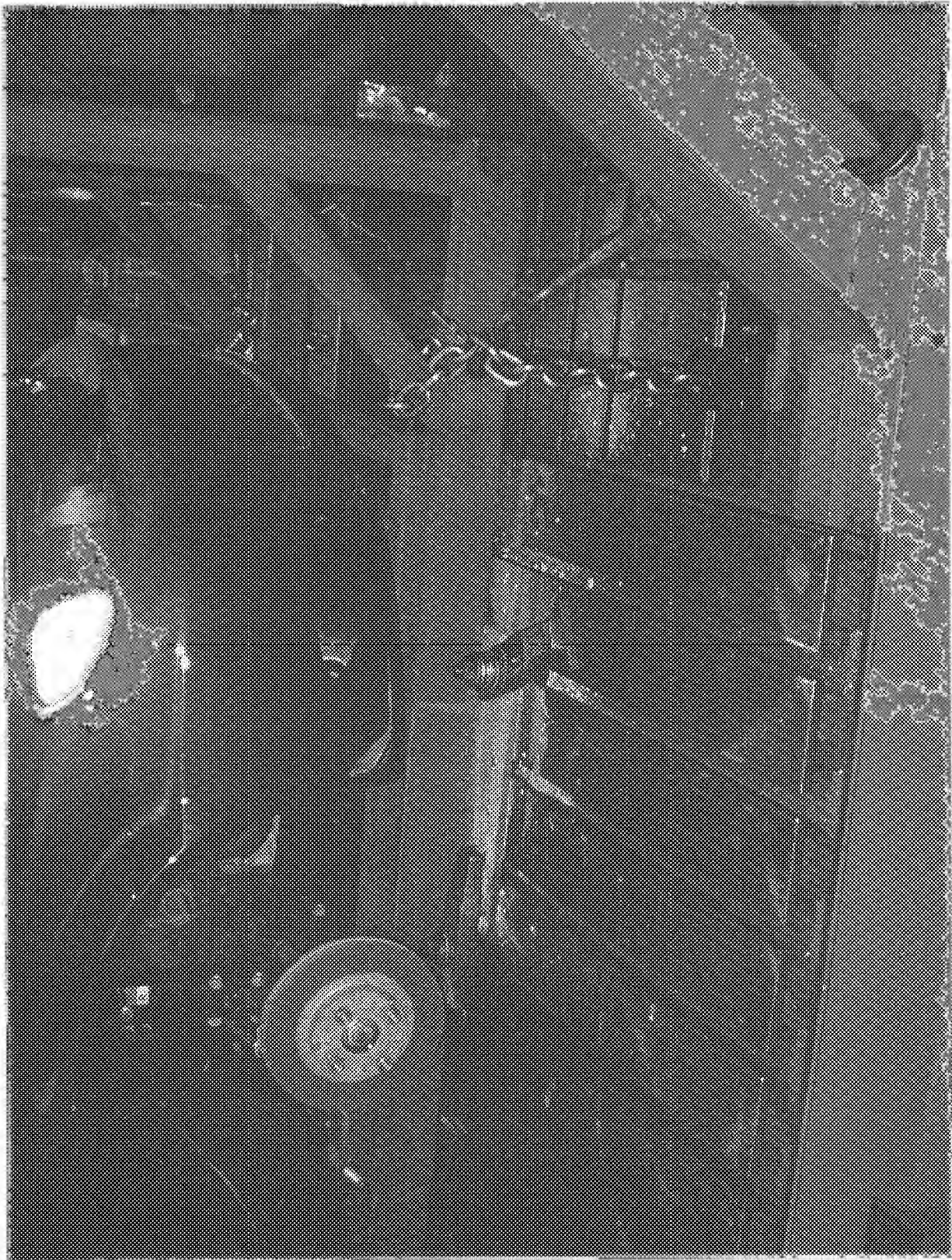
6.7 Vehicle tie down at each tie down location
6.7.1 left front



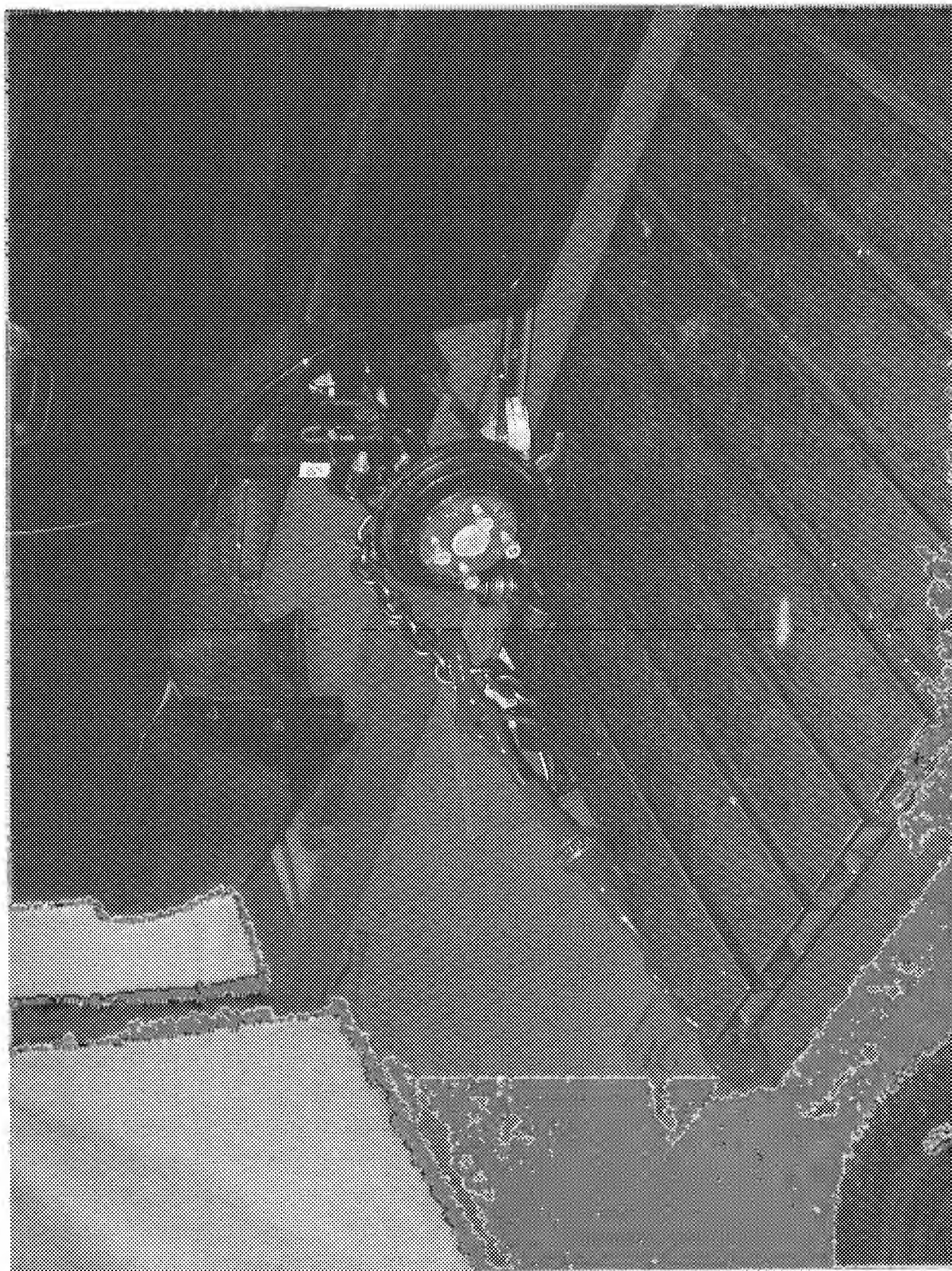
6.7.2 left rear



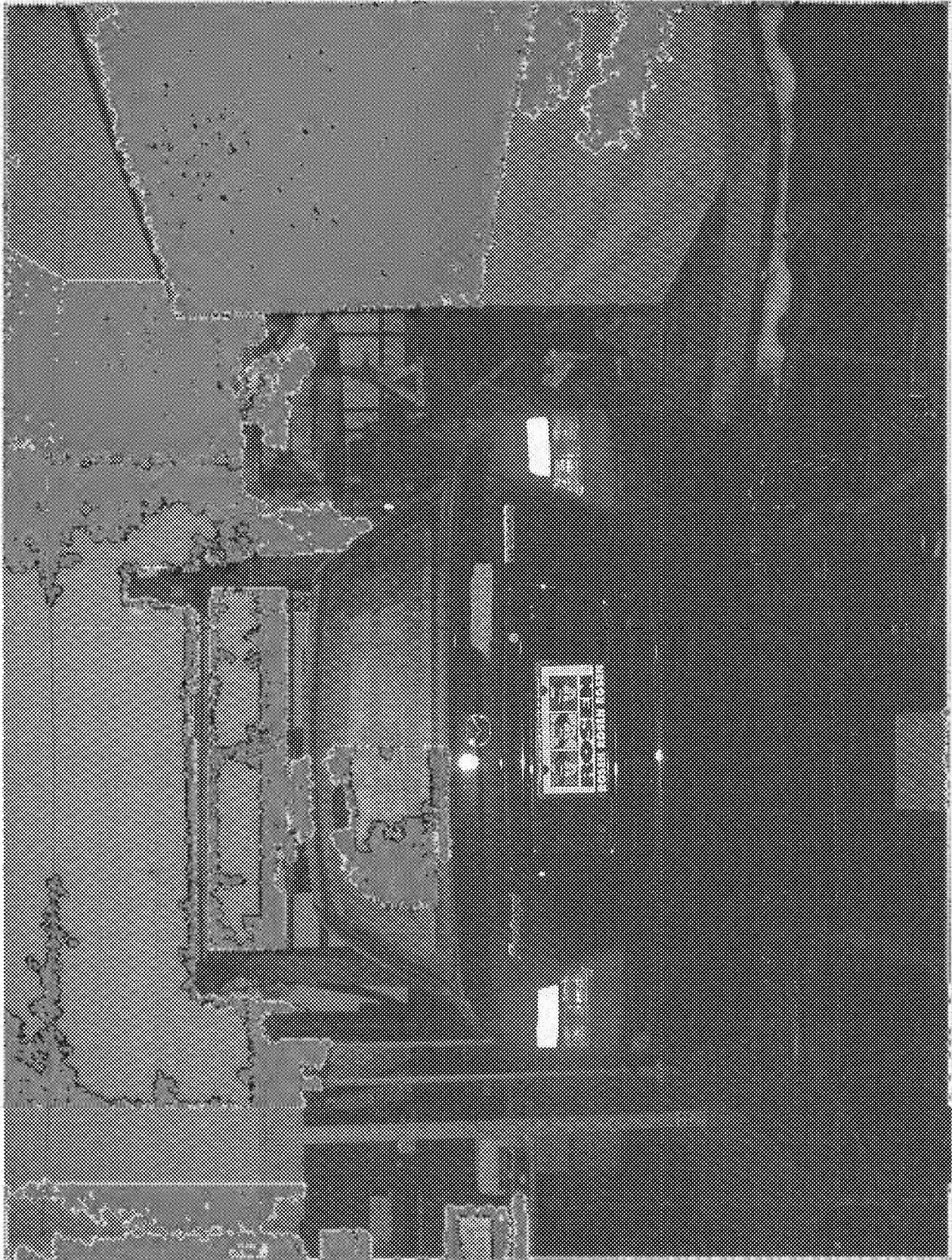
6.7.3 right front



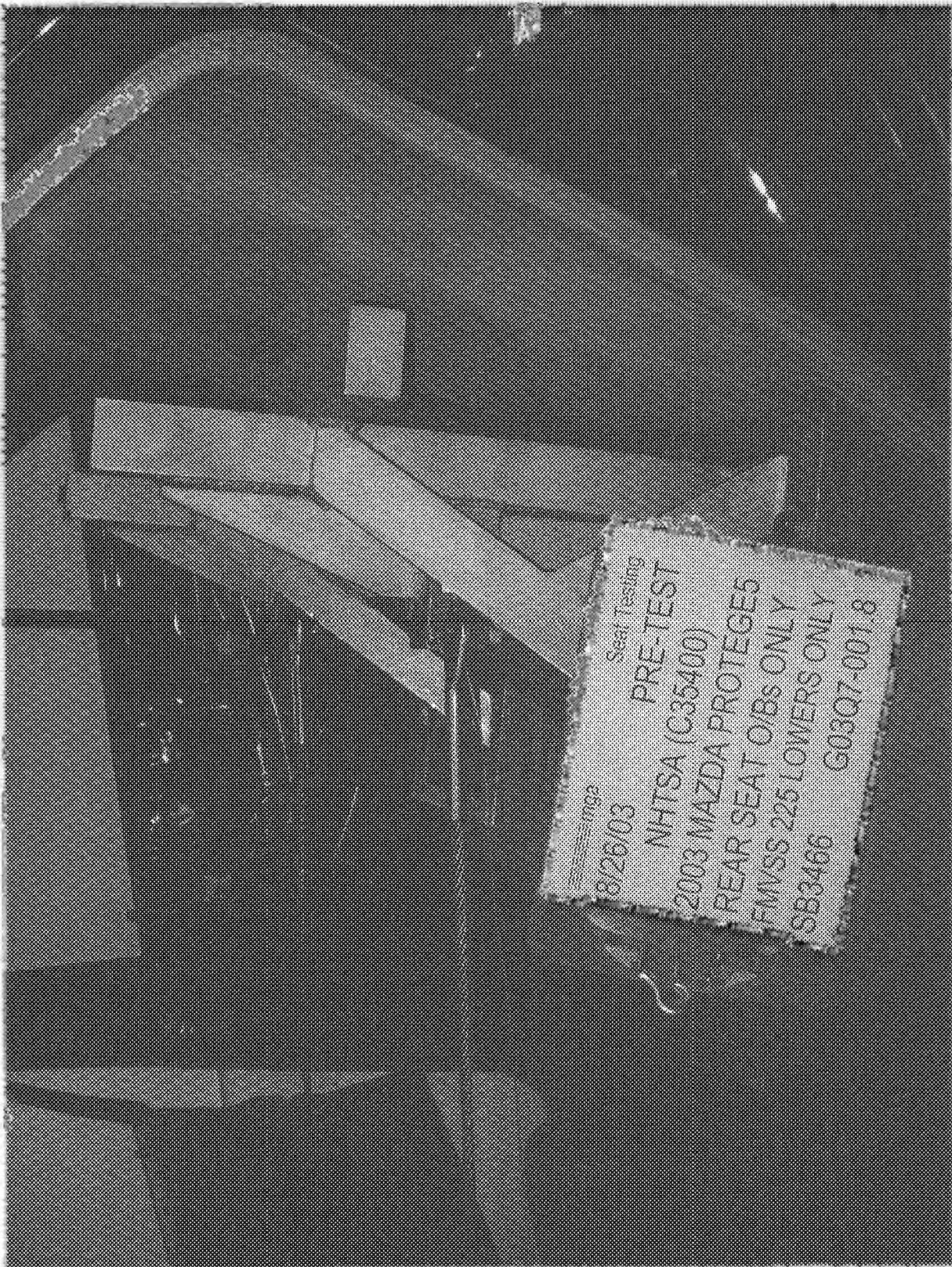
6.7.4 right rear



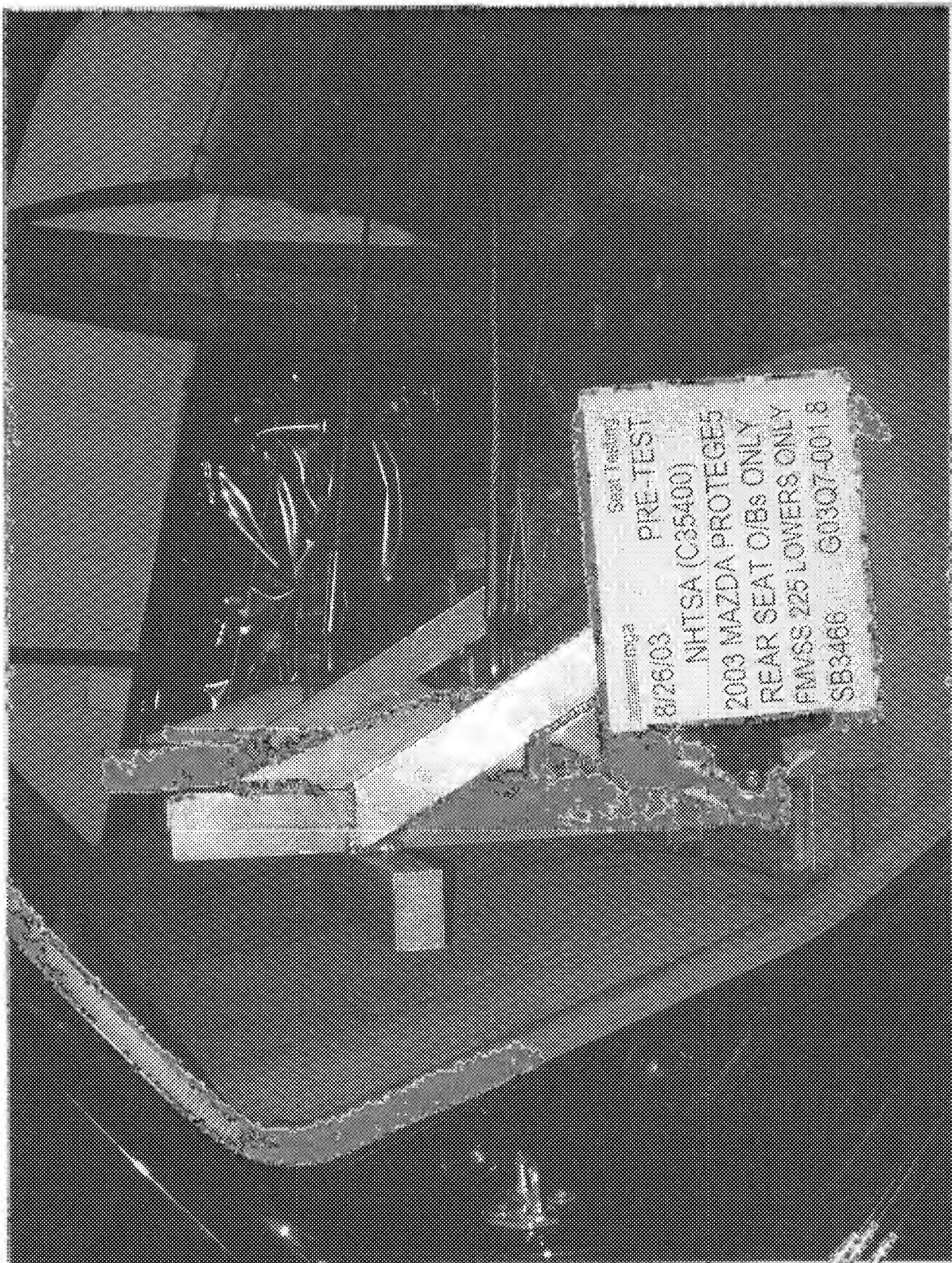
6.7.5 rear under vehicle



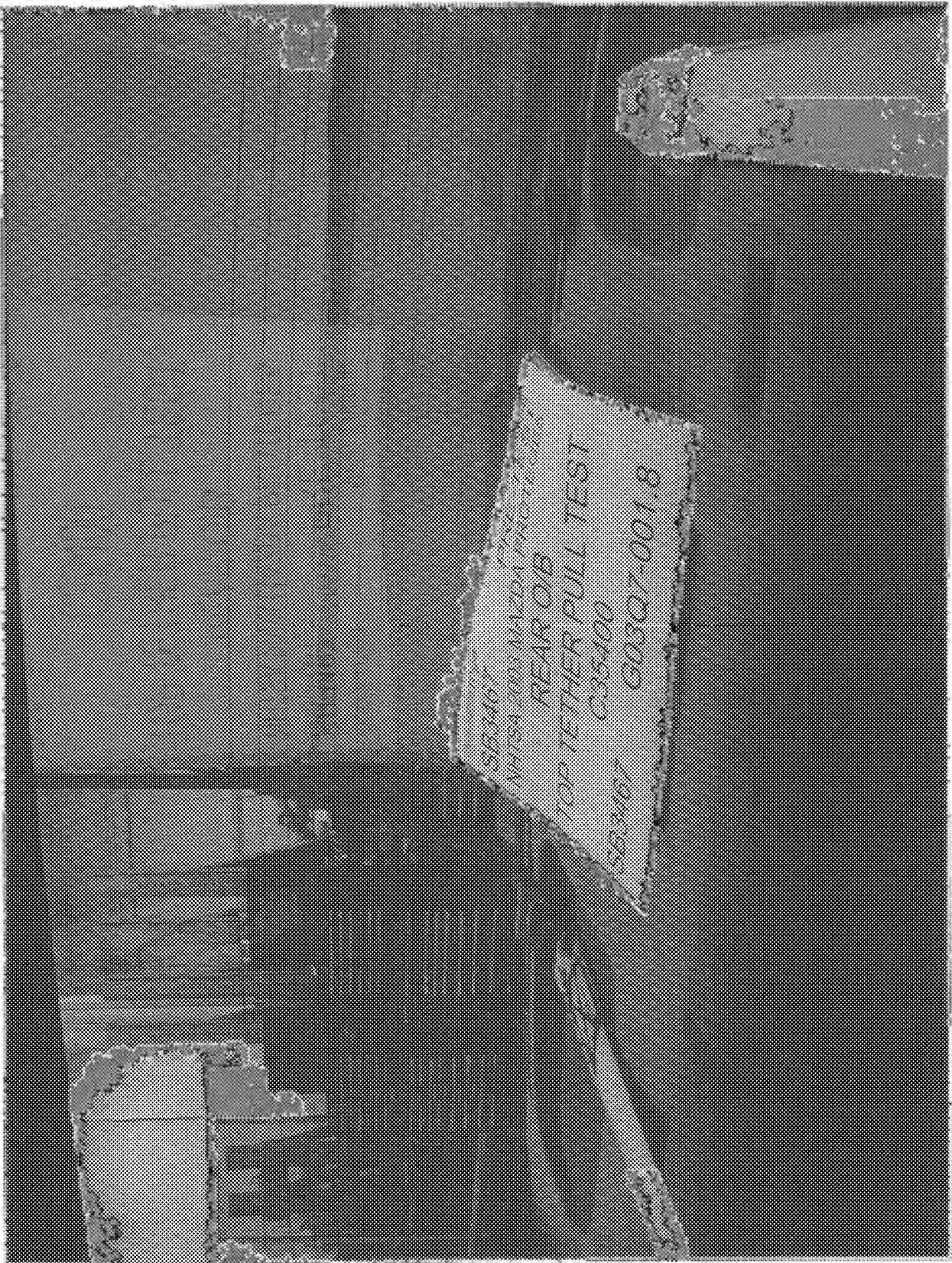
- 6.8 Pre-test views of each child restraint anchorage system installed in the vehicle
6.8.1 pre-forward SFAD II rear O/B lower only test 1 of 2



6.8.2 pre-forward SFAD II rear O/B lower only test 2 of 2



6.8.3 pre-forward rear O/B top tether pull test 1 of 2



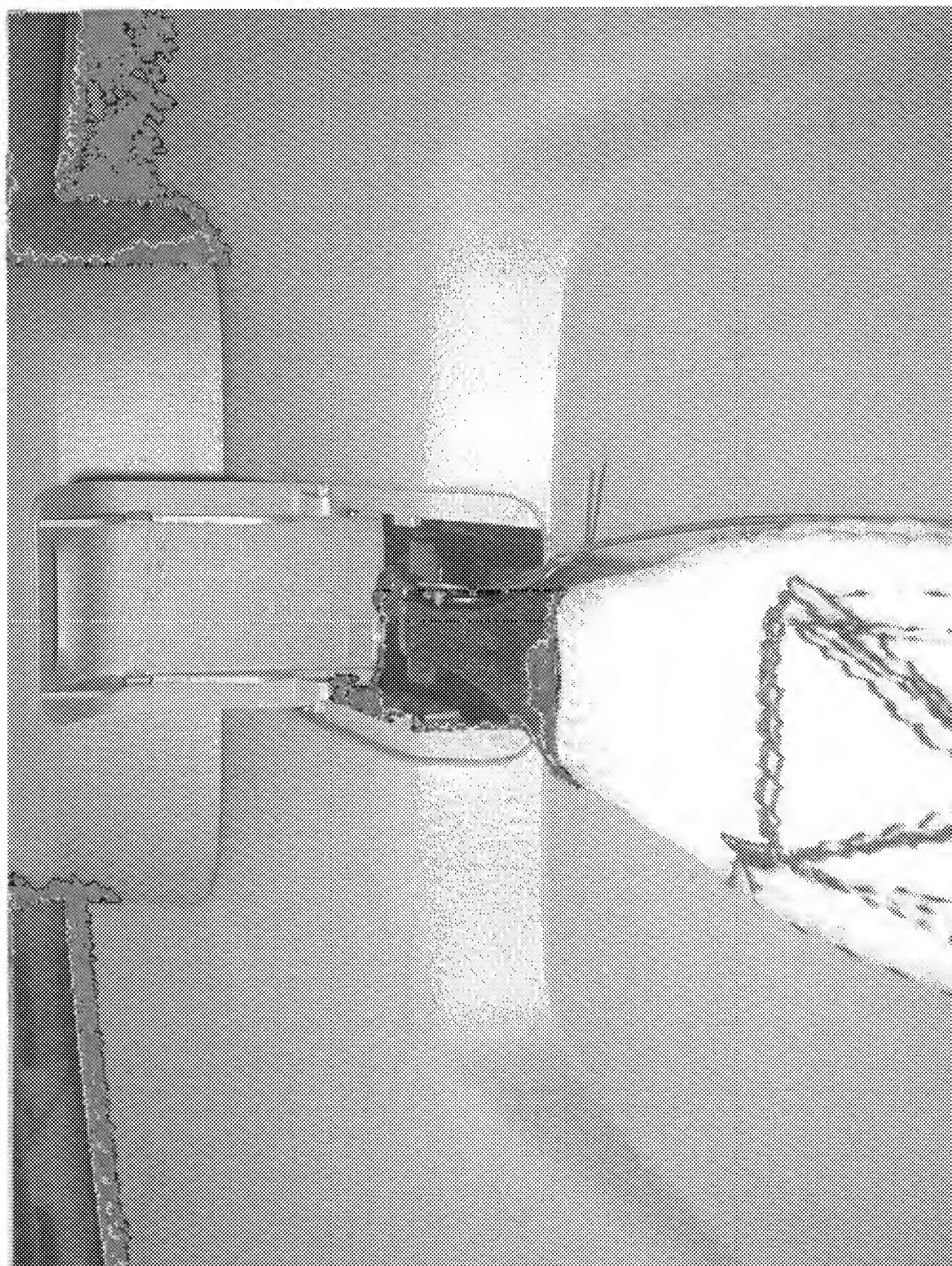
6.8.4 pre-forward rear O/B top tether pull test 2 of 2



6.8.5 pre-forward rear center top tether pull test 1 of 2



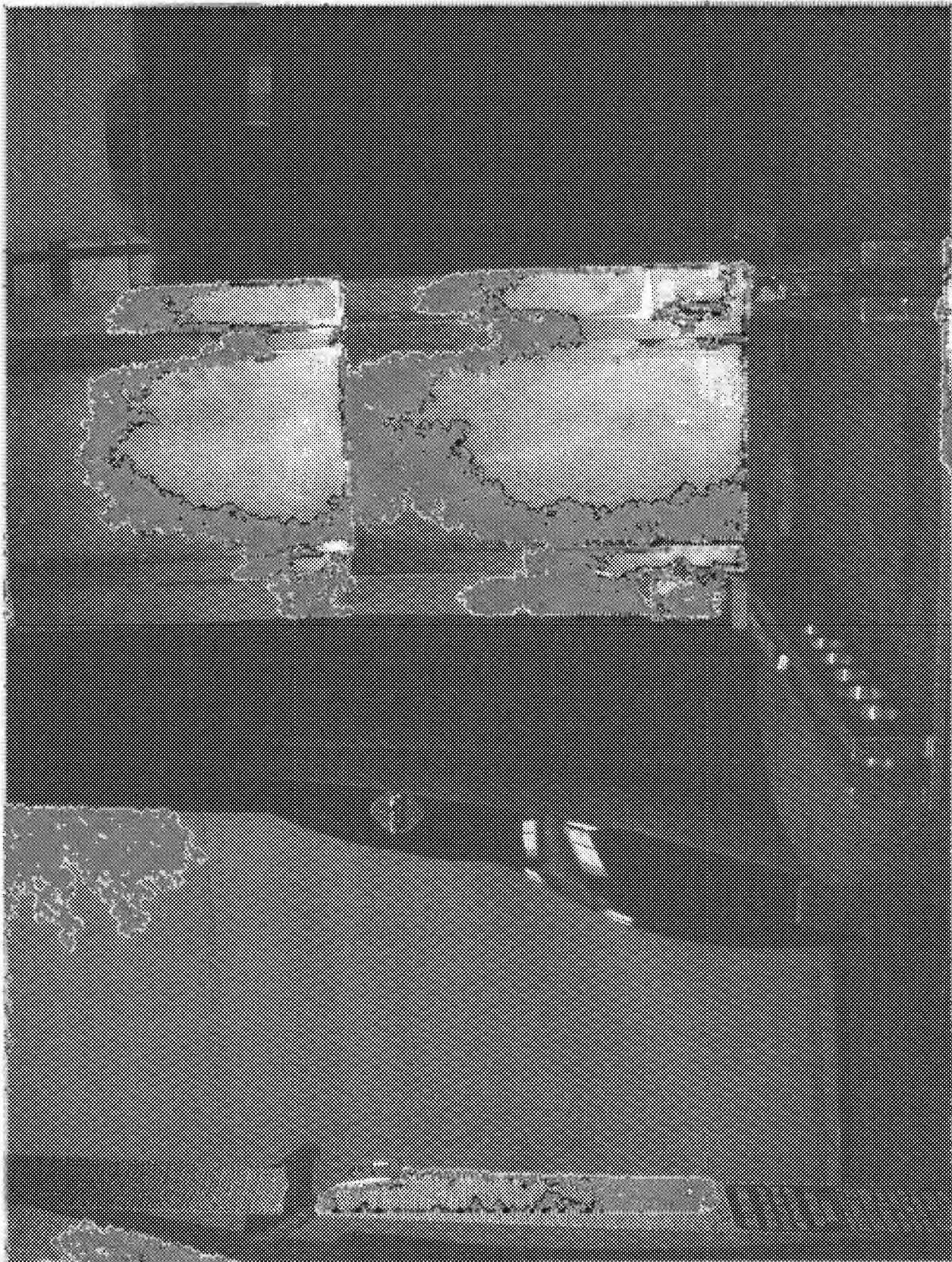
6.8.6 pre-forward rear center top tether pull test 2 of 2



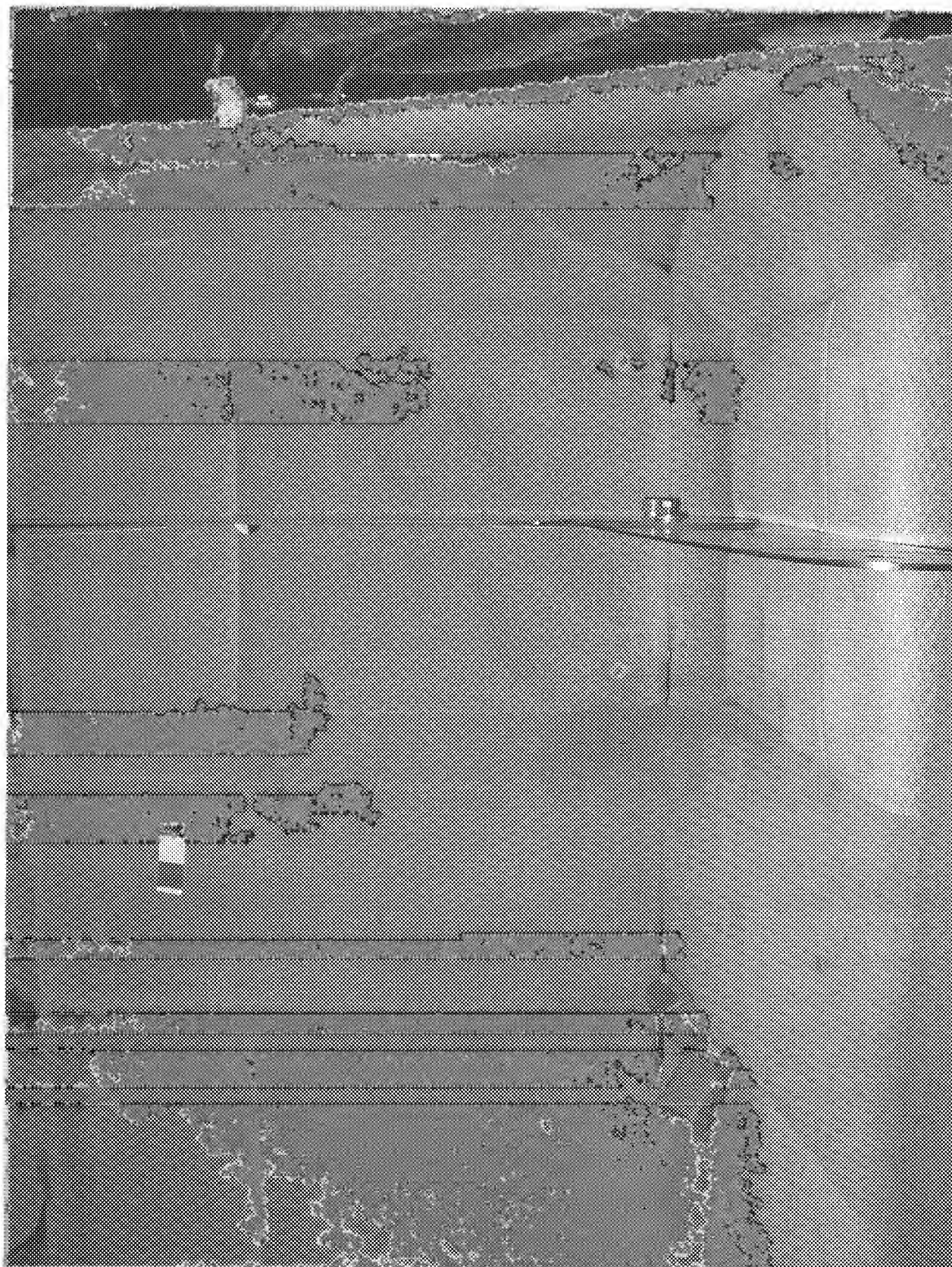
- 6.9 Pre-test equipment set up at each designated seating position
- 6.9.1 CRF in place rear LH seat



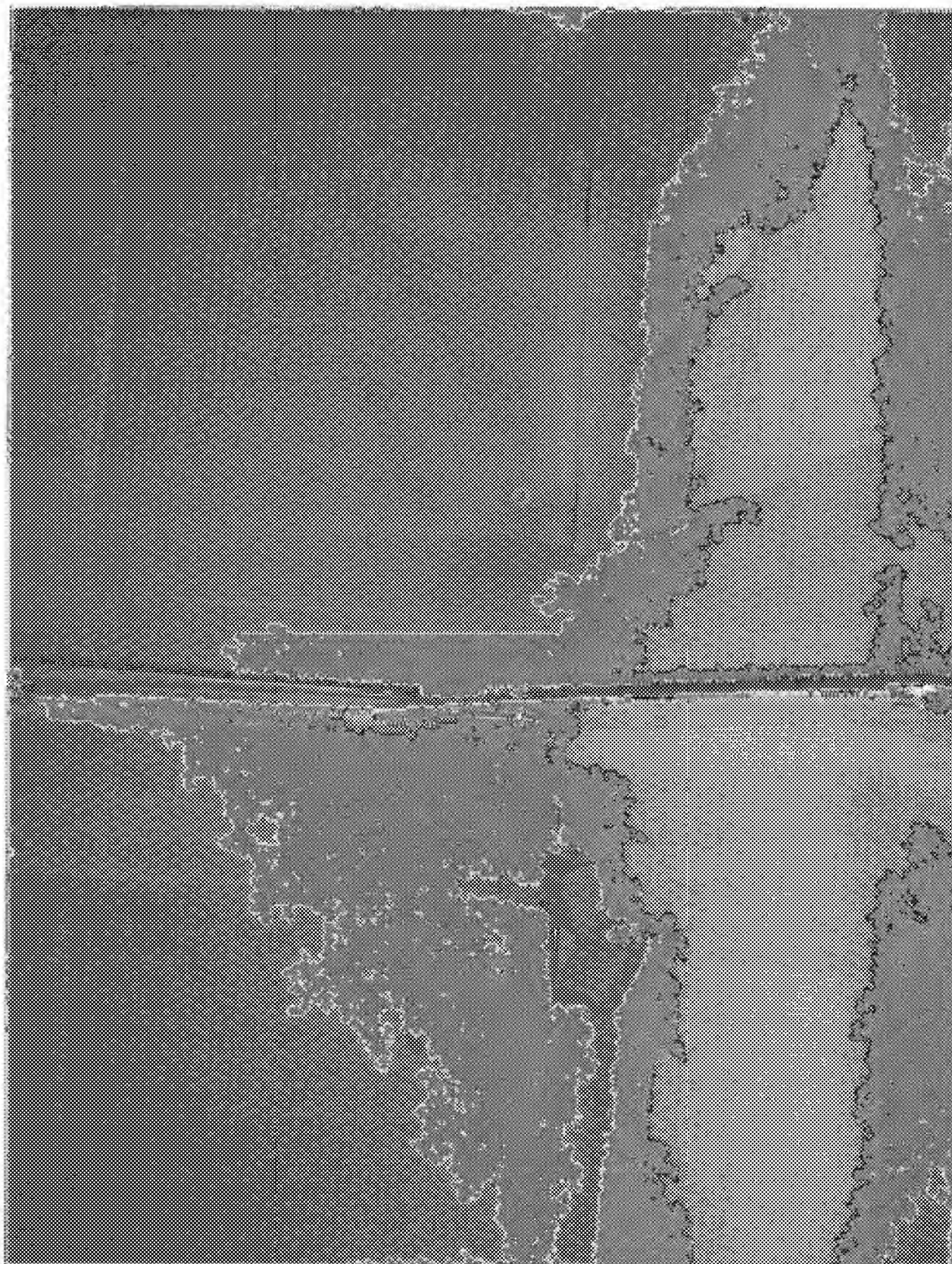
6.9.2 CRF in place rear RH seat



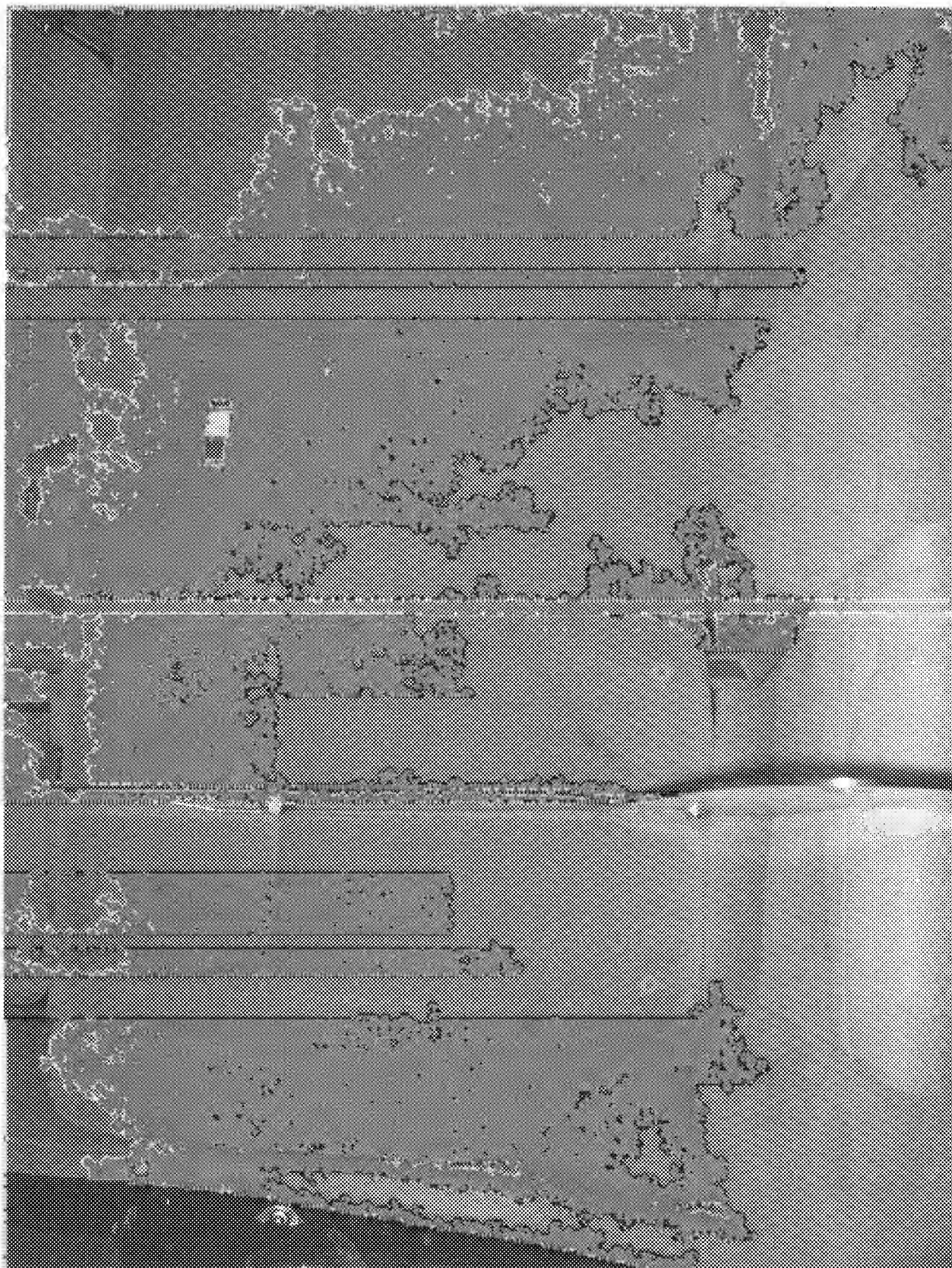
6.9.3 2D in place rear LH seat



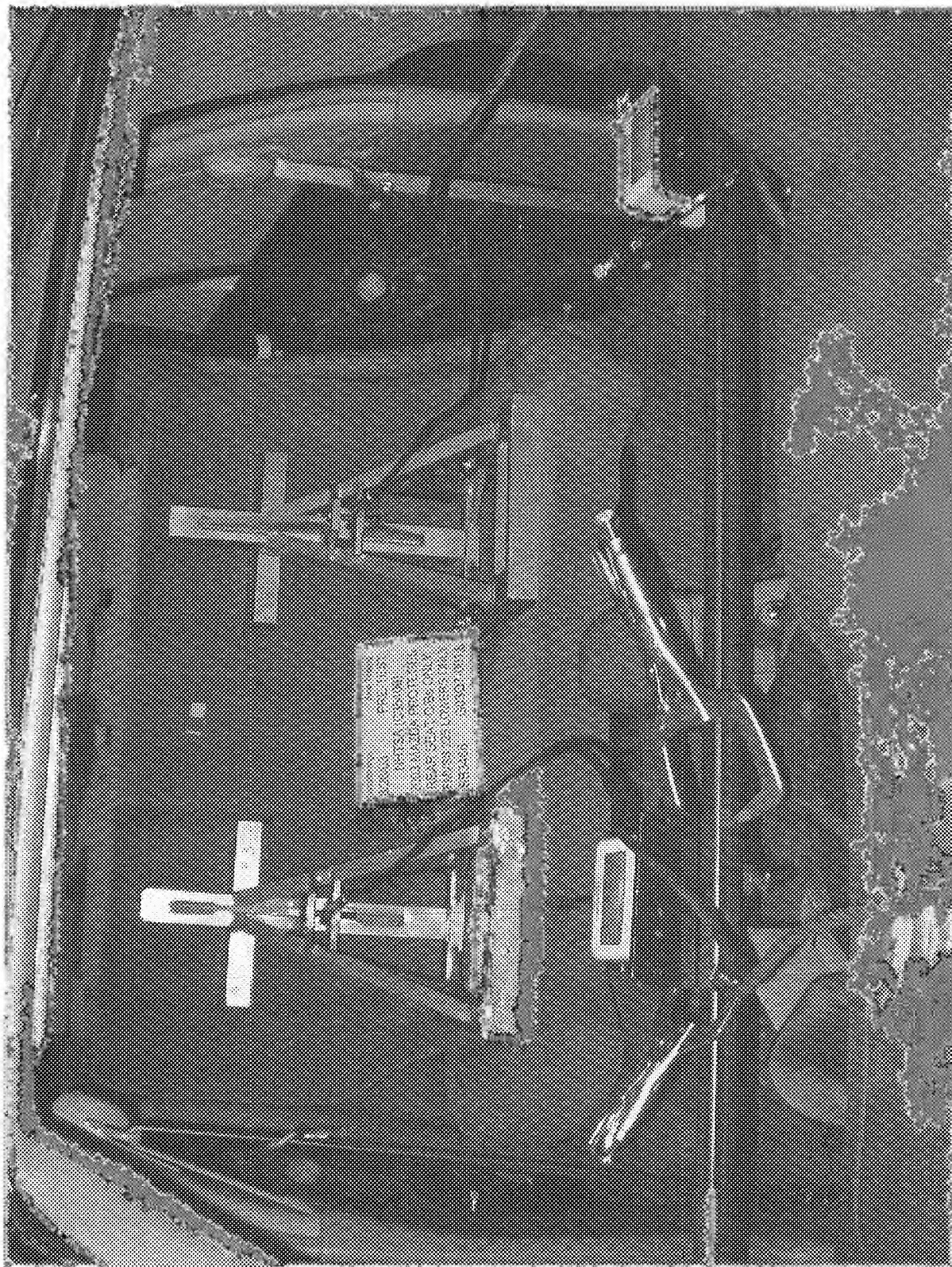
6.9.4 2D in place rear center seat



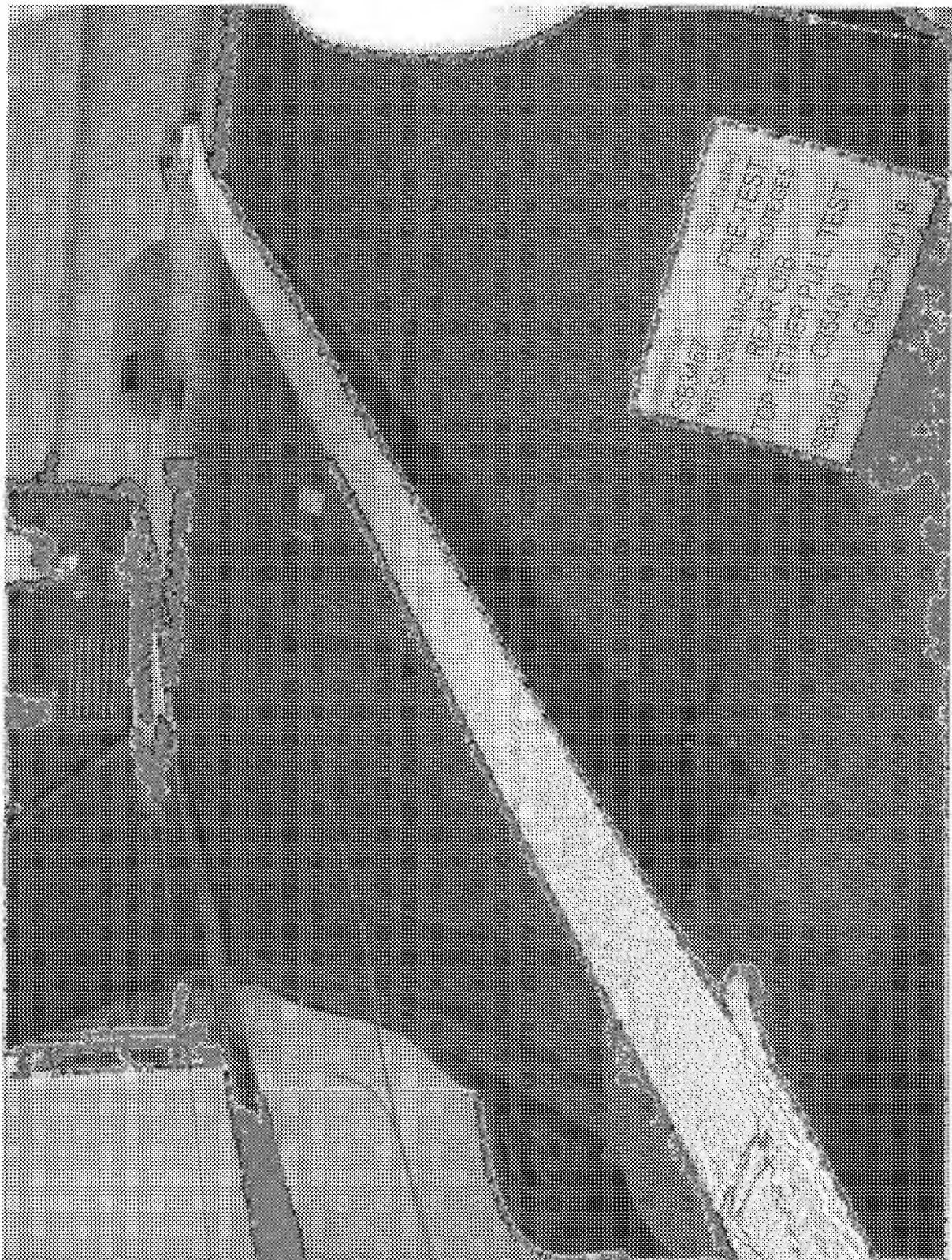
6.9.5 2D in place rear RH seat



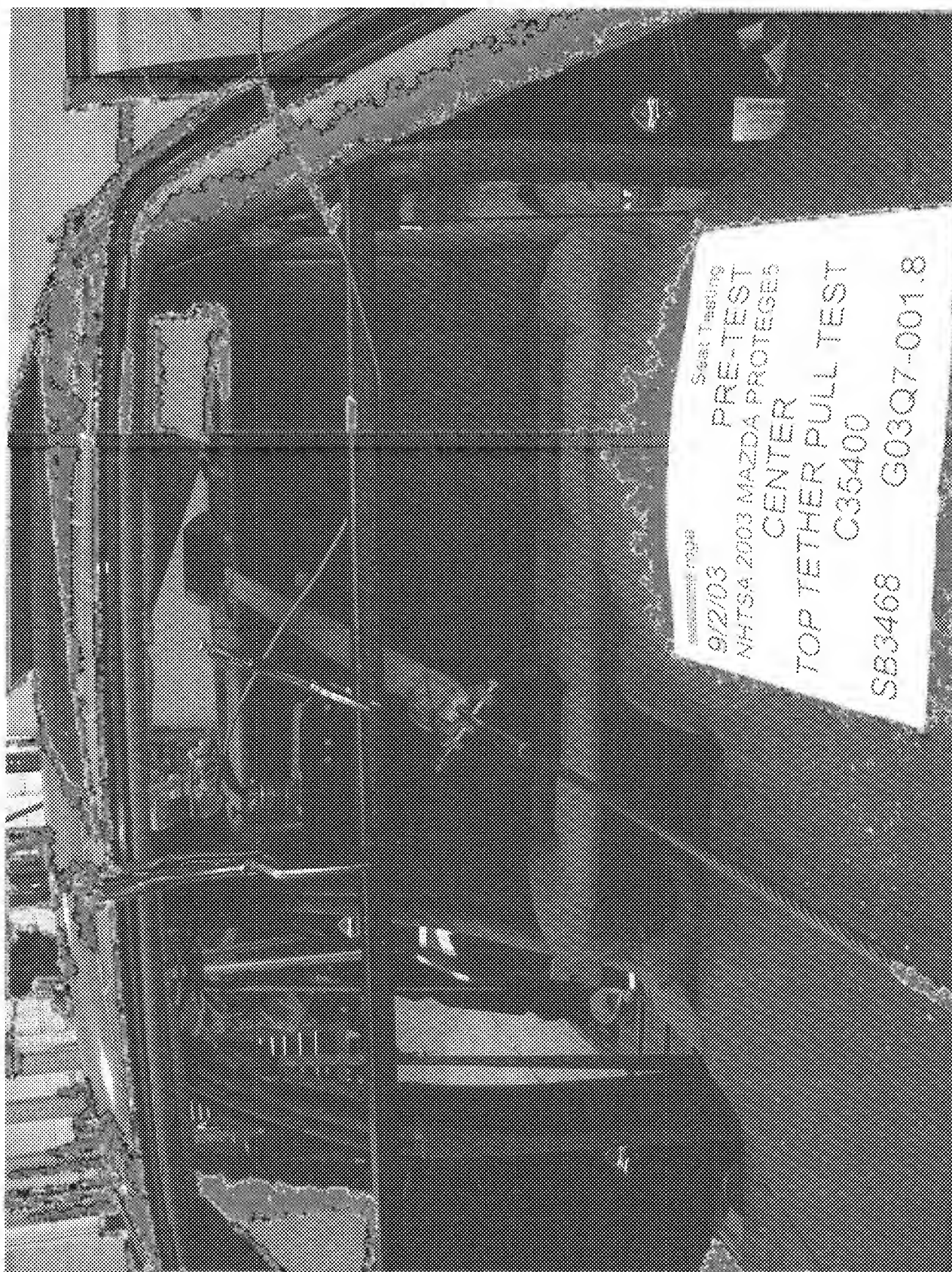
6.10 Load system control and data recording device in test position
6.10.1 SFAD II rear O/B lower only test



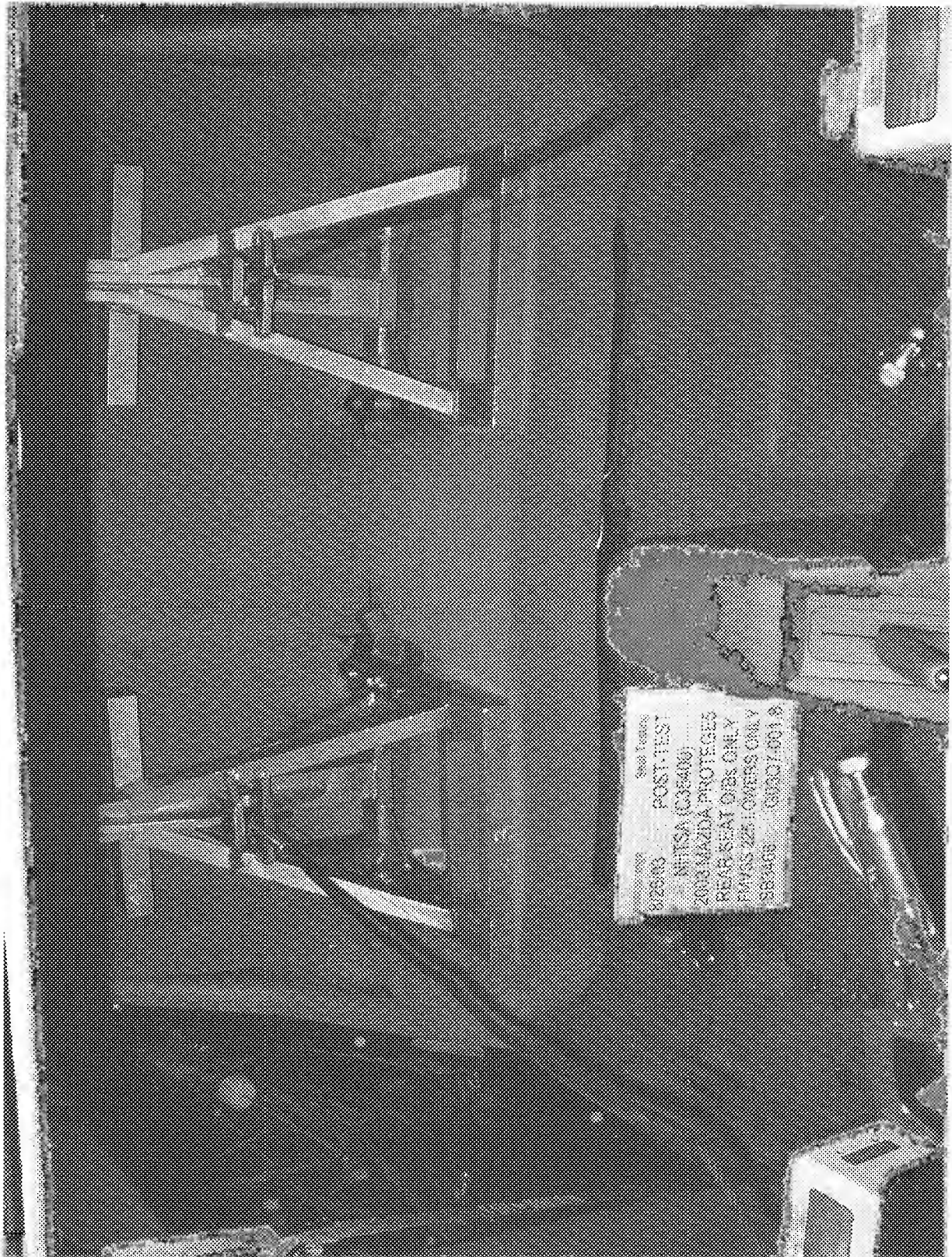
6.10.2 rear O/B top tether pull test



6.10.3 rear center top tether pull test



6.11 Post-test condition of each child restraint anchorage system
6.11.1 post-forward SFAD II rear O/B lower only test 1 of 2



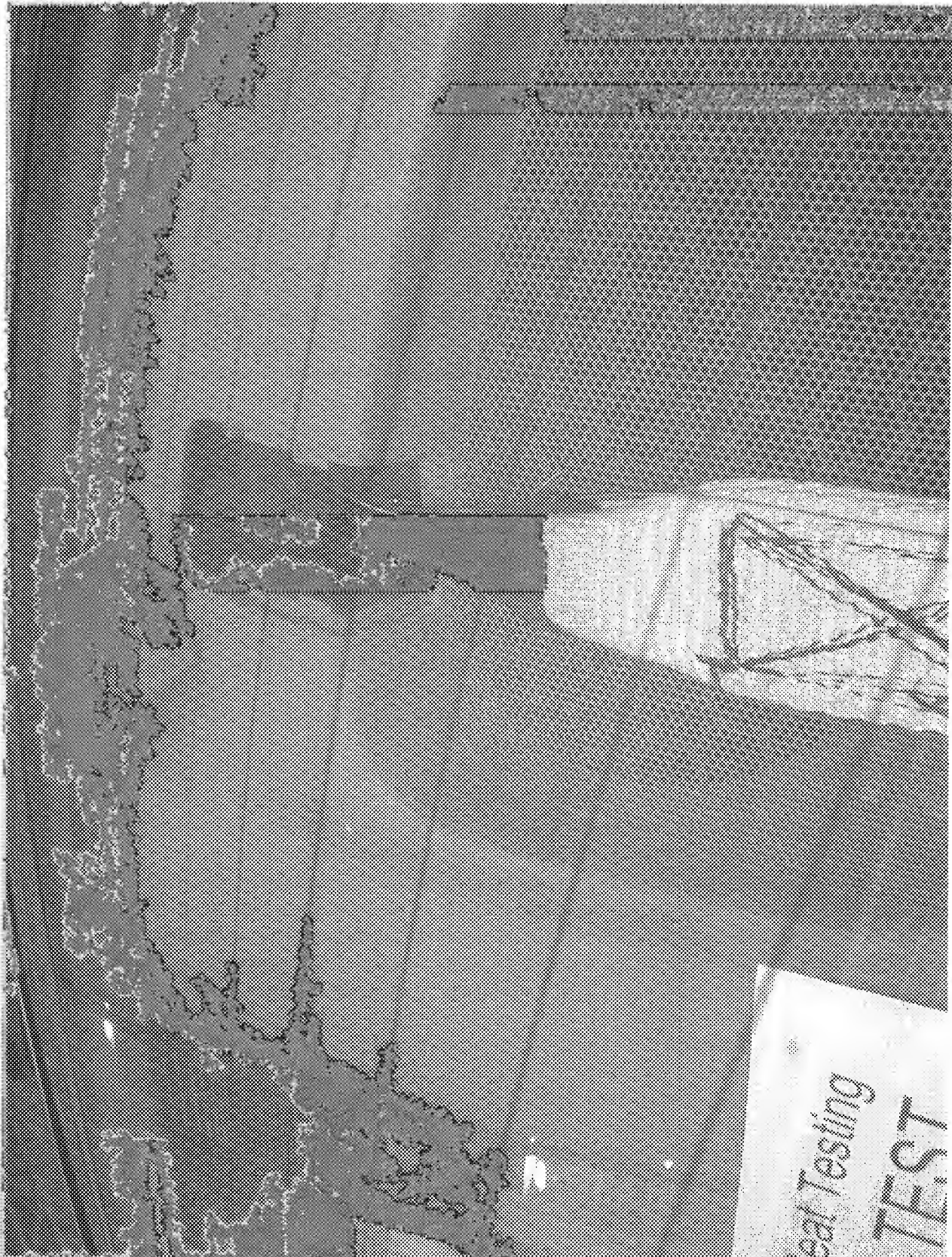
6.11.2 post-forward SFAD II rear O/B lower only test 2 of 2



6.11.3 post-forward rear O/B top tether pull test 1 of 2



6.11.4 post-forward rear O/B top tether pull test 2 of 2



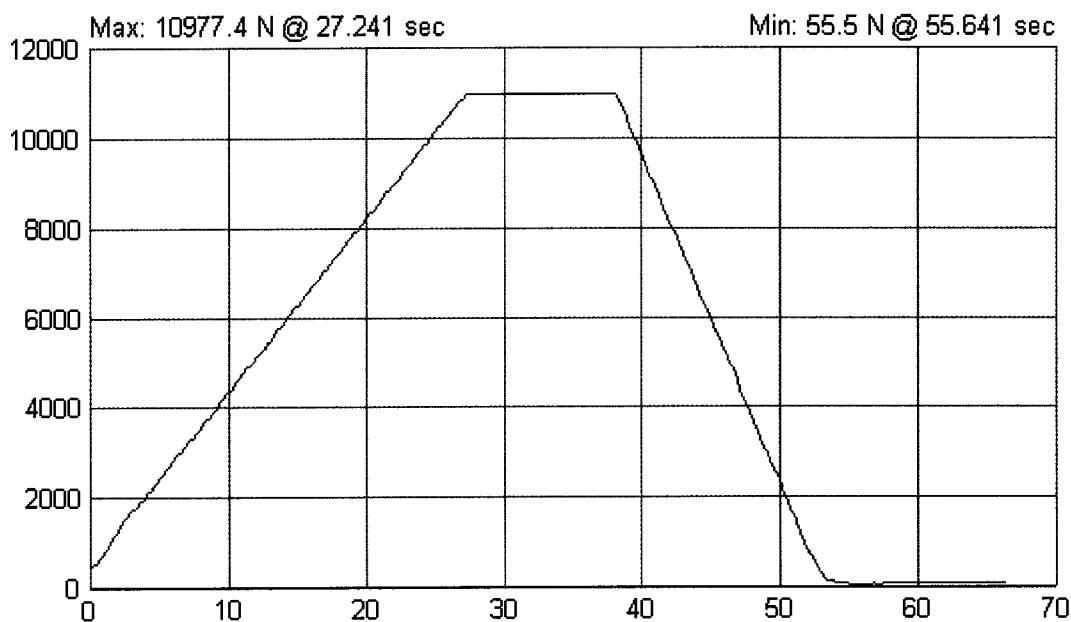
6.11.5 post-forward rear center top tether pull test 1 of 2



6.11.6 post-forward rear center top tether pull test 2 of 2



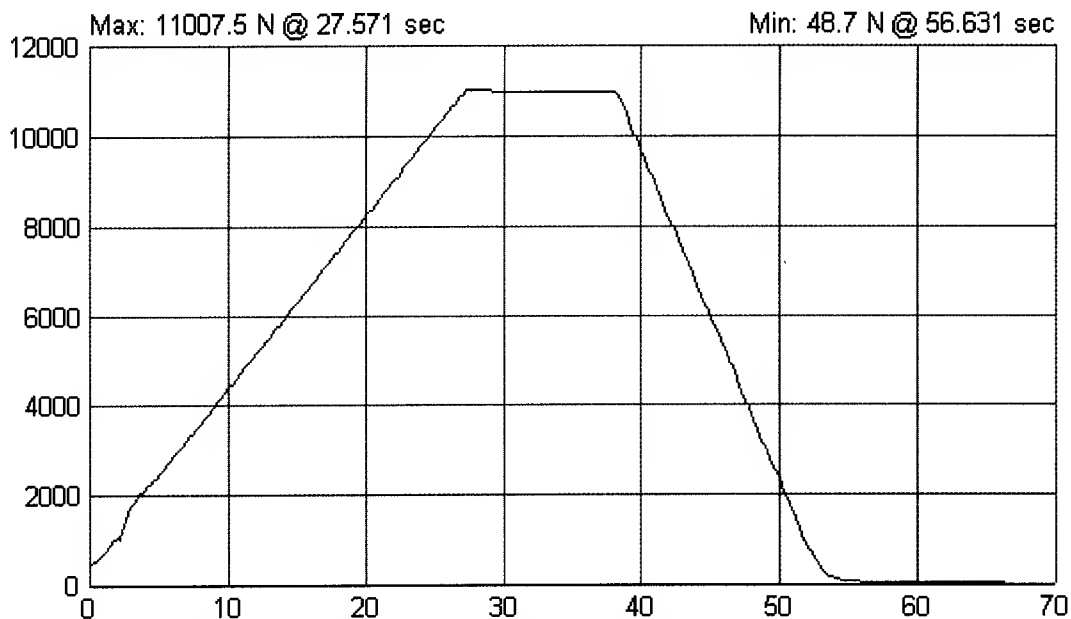
7.0 PLOTS



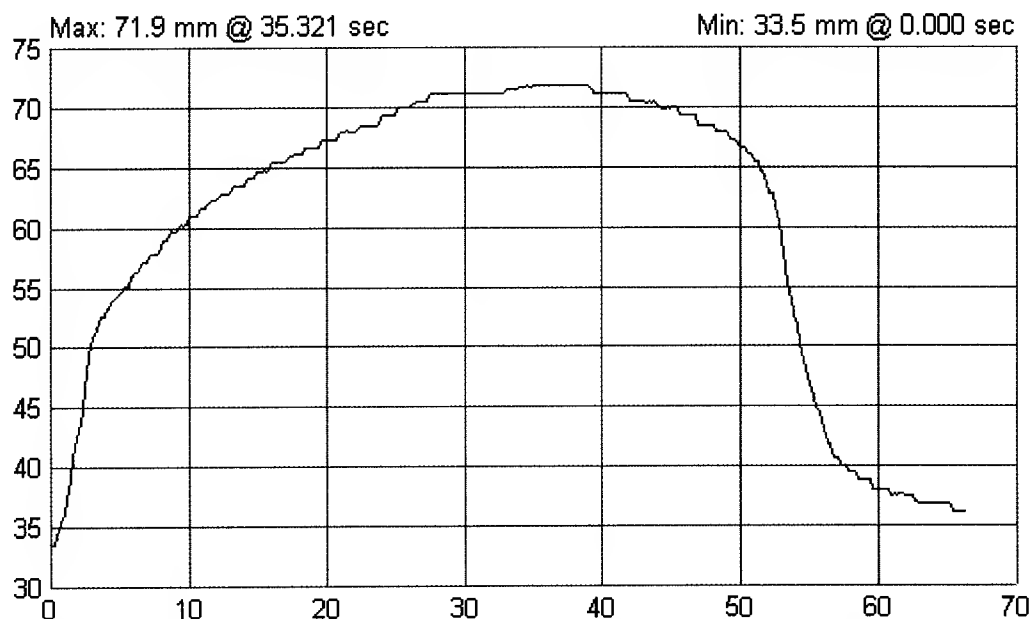
Run# SB3466: Lower Anchor Test (S11)-Rear Left Load (N) vs. Time (sec)



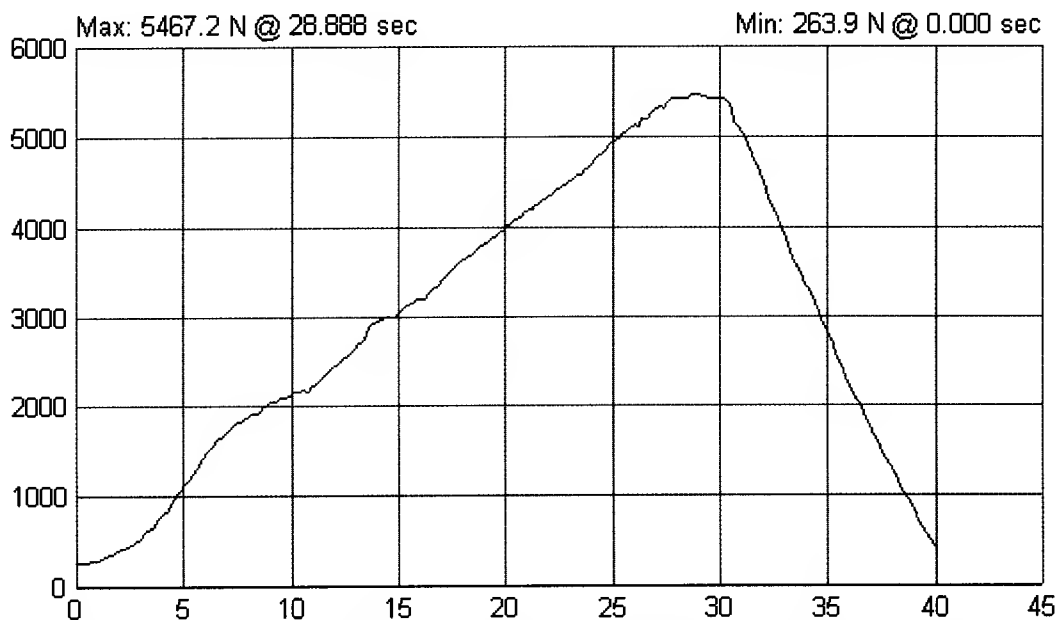
Run# SB3466: Lower Anchor Test (S11)-Rear Left SFAD X Displ. (mm) vs. Time (sec)



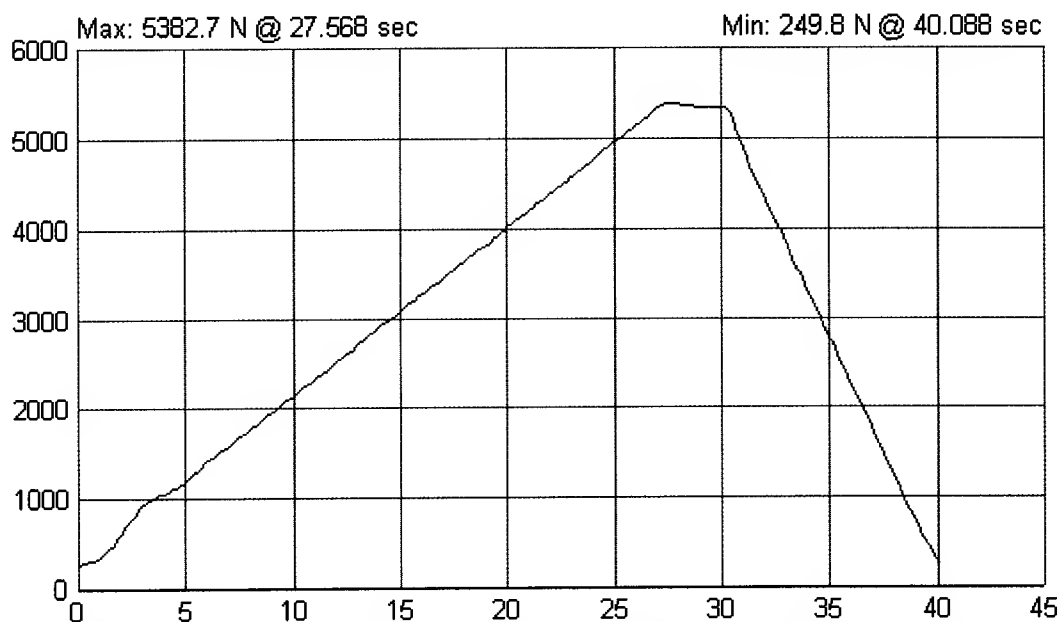
Run# SB3466: Lower Anchor Test (S11)-Rear Right Load (N) vs. Time (sec)



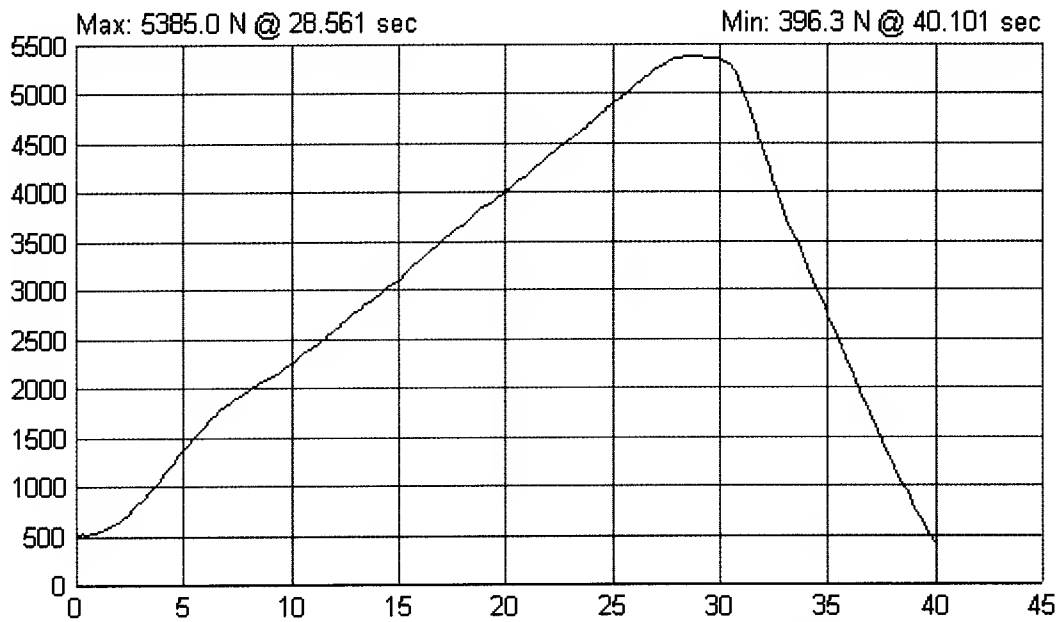
Run# SB3466: Lower Anchor Test (S11)-Rear Right SFAD X Displ. (mm) vs. Time (sec)



Run# SB3467: Tether Anchor Test (S6.3.4.1)-Rear Left Load (N) vs. Time (sec)



Run# SB3467: Tether Anchor Test (S6.3.4.1)-Rear Right Load (N) vs. Time (sec)



Run# SB3468: Tether Anchor Test (S6.3.4.1)-Rear Center Load (N) vs. Time (sec)

8.0 REPORT of VEHICLE CONDITION

REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

CONTRACT No.: DTNH22-02-D-11043

DATE: September 2, 2003

From: MGA Research Corporation, 446 Executive Drive, Troy, MI 48083

To: NHTSA, OVSC, NVS-221

The following vehicle has been subjected to compliance testing for FMVSS No's 208 & 225

The vehicle was inspected upon arrival at the laboratory for the test and found to contain all of the equipment listed below. All variances have been reported within 2 working days of vehicle arrival, by letter, to the NHTSA Industrial Property Manager (NAD0-30), with a copy to the OVSC COTR. The vehicle is again inspected, after the above test has been conducted, and all changes are noted below. The final condition of the vehicle is also noted in detail.

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Mazda Protégé 5

VEH. NHTSA NO.: C35400 VIN: JM1BJ225X30148560 COLOR: Black Mica

ODOMETER READINGS: ARRIVAL 51 miles Date: 8/2/03

COMPLETION 51 miles Date: 9/2/03

PURCHASE PRICE: \$12,719 DEALER'S NAME: Rosen Mazda of Lake Villa

TRANSMISSION DATA: Automatic X Manual No. of Speeds 5

TIRE DATA: Size 195/55R16

CHECK APPROPRIATE BOXES FOR VEHICLE EQUIPMENT:

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Brad Reaume

	Air Conditioning		Traction Control	X	Clock
	Tinted Glass		All Wheel Drive		Roof Rack
X	Power Steering		Speed Control	X	Console
	Power Windows	X	Rear Window Defroster	X	Driver Air Bag
	Power Door Locks		Sun Roof or T-Top	X	Passenger Air Bag
	Power Seat(s)	X	Tachometer	X	Front Disc Brakes
X	Power Brakes		Tilt Steering Wheel		Rear Disc Brakes
X	Antilock Brake System	X	AM/FM/Cassette Radio		Other

REMARKS:

Salvage only.

Equipment that is no longer on the test vehicle as noted on previous pages:

All equipment inventoried and placed in vehicle.

Explanation for equipment removal:

Windshield, front seats, I/P, & steering column removed for testing. All removed parts were placed in the trunk.

Test Vehicle Condition:

Salvage only.

RECORDED BY: Chris Greif

DATE: September 2, 2003

APPROVED BY: Brad Reaume

APPENDIX A
OWNERS MANUAL CHILD RESTRAINT SYSTEMS

Essential Safety Equipment

Child Restraint

Child Restraint Precautions

Mazda strongly urges the use of child-restraint systems for children small enough to use them.

You are required by law to use a child-restraint system for children in the U.S. and Canada. Check your local and state or provincial laws for specific requirements regarding the safety of children riding in your vehicle.

Whatever child-restraint system you consider, please pick the appropriate one for the age and size of the child, obey the law and follow the instructions that come with the individual child-restraint system.

A child who has outgrown child-restraint systems should sit in the rear and use seat belts, both lap and shoulder. If the shoulder belt crosses the neck or face, move the child closer to the center of the vehicle in the outboard seats, and towards the buckle on the right if the child is seated in the center seat.

Statistics confirm that the rear seat is the best place for all children up to 12 years of age—the more so with a supplemental restraint system (air bags).

A rear-facing child-restraint system should **NEVER** be used in the front seat because it would be too close to the air bag. The front passenger's seat is also the least preferred seat for other child-restraint systems.

Essential Safety Equipment
Child Restraint

⚠ WARNING

Proper Size of Child-Restraint System:

For effective protection in vehicle accidents and sudden stops, a child must be properly restrained using a seat belt or child-restraint system depending on age and size. If not, the child could be seriously injured or even killed in an accident.

Follow the Manufacturer's Instructions and Always Keep the Child-Restraint System Buckled Down:

An unsecured child-restraint system is dangerous. In a sudden stop or a collision it could move causing serious injury or death to the child or other occupants. Make sure the child-restraint system is properly secured in place according to the child-restraint system manufacturer's instructions. When not in use, remove it from the vehicle or fasten it with a seat belt, or latch it down to BOTH LATCH lower anchors for LATCH child-restraint systems.

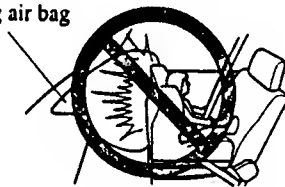
Holding a Child While the Vehicle is Moving:

Holding a child in your arms while the vehicle is moving is extremely dangerous. No matter how strong the person may be, he or she cannot hold onto a child in a sudden stop or collision and it could result in serious injury or death to the child or other occupants. Even in a moderate accident, the child may be exposed to air bag forces that could result in serious injury or death to the child, or the child may be slammed into the adult, injuring the adult. Always secure a child in a proper child-restraint system.

Rear-Facing Child-Restraint System:

Rear-facing child-restraint systems on the front seat are particularly dangerous. The child-restraint system can be hit by a deploying air bag and moved violently backward resulting in serious injury or death to the child. NEVER use a rear-facing child-restraint system in the front seat with an air bag that could deploy.

Deploying air bag



Essential Safety Equipment

Child Restraint

WARNING

Children and Seating Position with Side Air Bag:

Allowing anyone to lean over or against the front door is dangerous. If the vehicle is equipped with side air bags, the impact of an inflating side air bag could cause serious injury or death to the person. Children are more likely to sleep in the vehicle; when they do, they are more at risk in the front passenger's seat that has a side air bag because they may slump over into the path of the seatback-mounted air bag. Furthermore, leaning over or against the doors could block the side air bag and eliminate the advantages of supplemental protection. With the front air bag and the additional side air bag that comes out of the front seat, the rear seat is always a better location for children who are prone to sleeping. If a child can't be seated in the rear, do not allow the child to lean over or against the front door, even if the child is seated in a child-restraint system.

One Belt, One Passenger:

Using one seat belt for more than one person at a time is dangerous. A seat belt used in this way can't spread the impact forces properly and the two passengers could be crushed together and seriously injured or even killed. Never use one belt for more than one person at a time.

CAUTION

A seat belt or child-restraint system can become very hot in a closed vehicle during warm weather. To avoid burning yourself or a child, check them before you or your child touches them.

NOTE

Your Mazda is equipped with LATCH lower anchors for attachment of specially designed LATCH child-restraint systems in the rear seats. When using these anchors to secure a child-restraint system, refer to "LATCH Child-Restraint Systems" (page 2-31).

Essential Safety Equipment
Child Restraint

Installing Child-Restraint Systems

Accident statistics reveal that a child is safer in the rear seat. The front passenger's seat is clearly the worst choice for any child under 12, and with rear-facing child-restraint systems it is clearly unsafe due to air bags.

Some child-restraint systems now come with tethers and therefore must be installed on the seats that take tethers to be effective. In your Mazda, tethered child-restraint systems can only be accommodated in the three positions on the rear seat.

Some child-restraint systems also employ specially designed LATCH attachments; refer to "LATCH Child-Restraint Systems" (page 2-31).

WARNING

**Tethered Child-Restraint Systems
Work Only on Tether-Equipped Rear
Seats:**

Installation of a tether equipped child-restraint system in the front passenger's seat defeats the safety design of the system and will result in an increased chance of serious injury if the child-restraint system goes forward without benefit of being tethered.

Place tether equipped child-restraint systems where there are tether anchors.

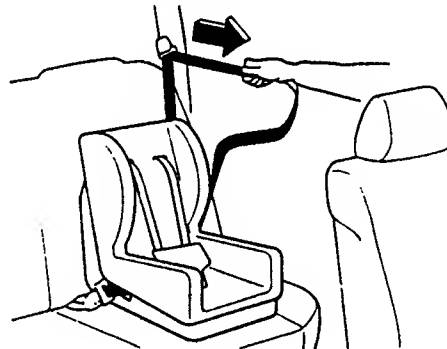
▼ Rear Seat Child-Restraint System Installation

Follow these instructions when using a child-restraint system, unless you are attaching a LATCH-equipped child-restraint system to the rear LATCH lower anchors. Refer to "LATCH Child-Restraint Systems" (page 2-31).

NOTE

Follow the child-restraint system manufacturer's instructions carefully. If you are not sure whether you have a LATCH system or tether, check in the child-restraint system manufacturer's instructions and follow them accordingly. Depending on the type of child-restraint system, it may not employ seat belts which are in automatic locking mode.

1. Secure the child-restraint system with the lap portion of the lap/shoulder belt. See the instructions on the child-restraint system for belt routing instructions.
2. To get the retractor into the automatic locking mode, pull the shoulder belt portion of the seat belt until the entire length of the belt is out of the retractor.

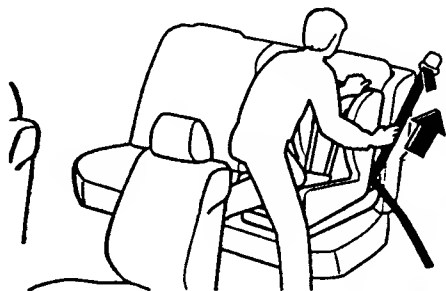


2-25

Essential Safety Equipment

Child Restraint

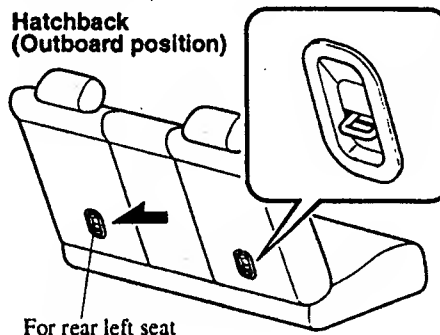
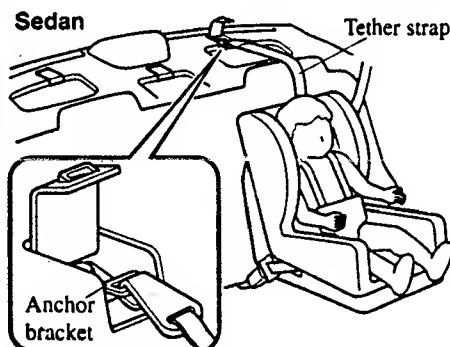
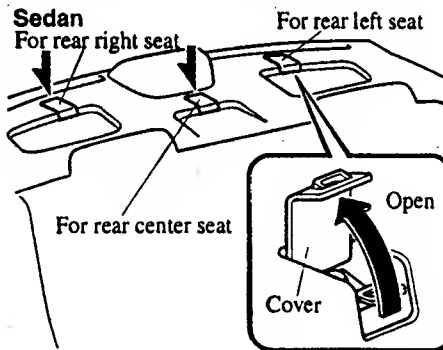
3. Push the child-restraint system firmly into the vehicle seat. Be sure the belt retracts as snugly as possible. Clicking from the retractor will be heard during retraction if the system is in the automatic locking mode. If the belt does not lock the seat down tight, repeat this step.



NOTE

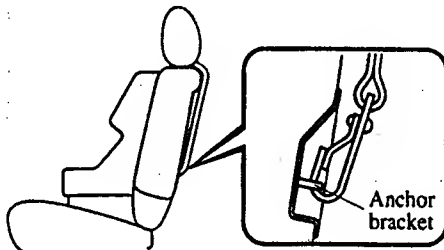
Inspect this function before each use of the child-restraint system. You should not be able to pull the shoulder belt out of the retractor while the system is in the automatic locking mode. When you remove the child-restraint system, be sure the belt fully retracts to return the system to emergency locking mode before occupants use the seat belts.

4. If your child-restraint system requires the use of a tether strap, hook and tighten the tether strap by following the manufacturer's instructions.

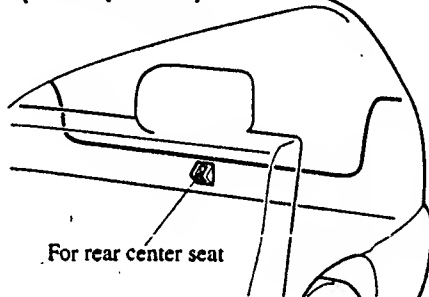


Essential Safety Equipment
Child Restraint

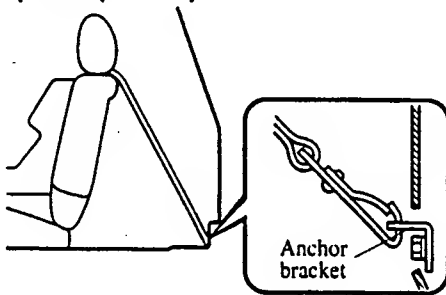
**Hatchback
(Outboard position)**



**Hatchback
(Center position)**



**Hatchback
(Center position)**



⚠ WARNING

Child-Restraint Tether Usage:

Using the tether to secure anything but a child-restraint system is dangerous. This could weaken or damage the tether or tether anchor and result in injury. Use the tether and tether anchor only for a child-restraint system.

Incorrect Positioning of the Tether Strap (Hatchback):

Positioning the tether strap on top of the head restraint is dangerous. In a collision, the head restraint could bend or break. This will cause the strap to loosen. The child-restraint system could move and injure the child or someone else. Always position the tether strap between the head restraint and the seatback.

Essential Safety Equipment

Child Restraint

▼ If You Must Use the Front Seat for Children

If you cannot put all children in the rear seat, at least put the smallest in the rear and be sure the largest child up front uses the shoulder belt over the shoulder.

Do not put rear-facing child-restraint systems on the front passenger's seat. This seat is also not set up for tethered child-restraint systems, put them in one of the three rear seat positions set up with tether anchors.

Likewise the LATCH child-restraint system cannot be secured in the front passenger's seat and should be used in the rear seat.

Don't allow anyone to sleep against the right front door if you have an optional side air bag, it could cause serious injuries to an out of position occupant. As children more often sleep in cars, it is better to put them in the rear seat. If installing the child-restraint system on the front seat is unavoidable, follow these instructions when using a front-facing child-restraint system in the front passenger's seat.

NOTE

To check if your Mazda front seats have side air bags:
Every Mazda side air bag will have a "SRS-Air Bag" label on the outboard shoulder of the front seats.

WARNING

Front Passenger's Seat Position:

As your vehicle has front air bags and doubly so if your vehicle has side air bags, a front-facing child-restraint system should be put on the front seat only when it is unavoidable.

Always move the seat as far back as possible, because the force of a deploying air bag could cause serious injury or death to the child.

Rear-Facing Child-Restraint System:

Rear-facing child-restraint systems on the front seat are particularly dangerous.

The child-restraint system can be hit by a deploying air bag and moved violently backward resulting in serious injury or death to the child.

NEVER use a rear-facing child-restraint system in the front seat with an air bag that could deploy.

Essential Safety Equipment

Child Restraint

WARNING

Children and Seating Position with Side Air Bag:

Allowing anyone to lean over or against the front door is dangerous. If the vehicle is equipped with side air bags, the impact of an inflating side air bag could cause serious injury or death to the person. Children are more likely to sleep in the vehicle; when they do, they are more at risk in the front passenger's seat that has a side air bag because they may slump over into the path of the seatback-mounted air bag. Furthermore, leaning over or against the doors could block the side air bag and eliminate the advantages of supplemental protection. With the front air bag and the additional side air bag that comes out of the front seat, the rear seat is always a better location for children who are prone to sleeping. If a child can't be seated in the rear, do not allow the child to lean over or against the front door, even if the child is seated in a child-restraint system.

▼ Front Passenger's Seat Child-Restraint System Installation

1. Slide the seat as far back as possible.



2. Secure the child-restraint system with the lap portion of the lap/shoulder belt. See the instructions on the child-restraint system for belt routing instructions.
3. To get the retractor into the automatic locking mode, pull the shoulder belt portion of the seat belt until the entire length of the belt is out of the retractor.
4. Push the child-restraint system firmly into the vehicle seat. Be sure the belt retracts as snugly as possible. Clicking from the retractor will be heard during retraction if the system is in automatic locking mode. If the belt does not lock the seat down tight, repeat this step.

Essential Safety Equipment

Child Restraint

NOTE

- **Inspect this function before each use of the child-restraint system. You should not be able to pull the shoulder belt out of the retractor while the system is in the automatic locking mode. When you remove the child-restraint system, be sure the belt fully retracts to return the system to emergency locking mode before occupants use the seat belts.**
- **Follow the child-restraint system manufacturer's instruction carefully. Depending on the type of child-restraint system, it may not employ seat belts which are in automatic locking mode.**

Essential Safety Equipment
Child Restraint

LATCH Child-Restraint Systems

Your Mazda is equipped with LATCH lower anchors for attachment of specially designed LATCH child-restraint systems in the rear seats. Both anchors must be used, otherwise the seat will bounce around and put the child in danger. Some LATCH child-restraint systems must also be used in conjunction with a tether to be effective. If they have a tether you must use it to better assure your child's safety.

WARNING

Manufacturer's Instructions for Child-Restraint System:

An unsecured child-restraint system is dangerous. In a sudden stop or a collision it could move causing serious injury or death to the child or other occupants. Make sure the child-restraint system is properly secured in place according to the child-restraint system manufacturer's instructions.

Attaching Two Child-Restraint Systems to the Same LATCH Lower Anchor:

Attaching two child-restraint systems to the same LATCH lower anchor is dangerous. In a collision, one anchor may not be strong enough to hold two child-restraint system attachments and may break, causing serious injury or death. If you use the seat position for another child-restraint system when an outboard LATCH position is occupied, use the center seat belts instead, and the tether if tether-equipped.

Unsecured Child-Restraint System:

An unsecured child-restraint system is dangerous. In a sudden stop or a collision it could move causing serious injury or death to the child or other occupants. Follow the child-restraint system manufacturer's instructions on belt routing to secure the seat just as you would with a child in it so that nobody is tempted to put a child in an improperly secured seat later on. When not in use, remove it from the vehicle or fasten it with a seat belt, or latch it down to BOTH LATCH lower anchors for LATCH child-restraint systems.

LATCH Child-Restraint Systems:

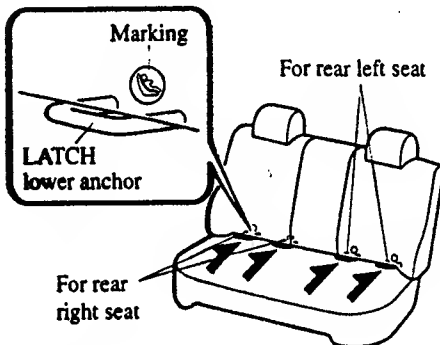
Not following the child-restraint system manufacturer's instructions when installing the child-restraint system is dangerous. If seat belts or a foreign object prevent the child-restraint system from being securely attached to the LATCH lower anchors and the child-restraint system is installed improperly, the child-restraint system could move in a sudden stop or collision causing serious injury or death to the child or other occupants. When installing the child-restraint system, make sure there are no seat belts or foreign objects near or around the LATCH lower anchors. Always follow the child-restraint system manufacturer's instructions.

Essential Safety Equipment

Child Restraint

▼ Child-Restraint System Installation Procedure (Rear Outboard Seats)

1. Expand the area between the seat bottom and the seatback slightly to verify the locations of the LATCH lower anchors.

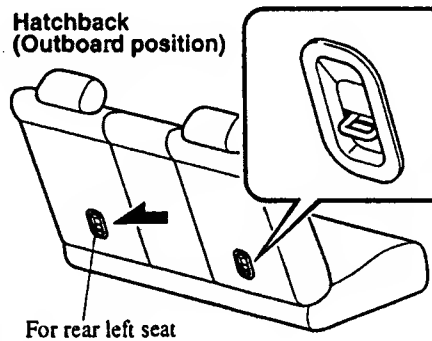
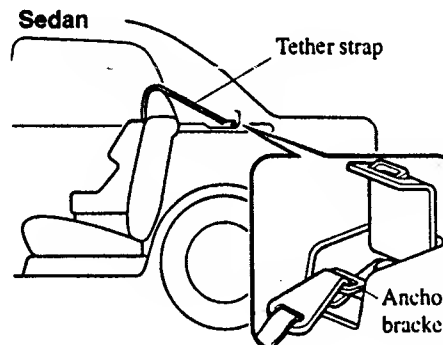
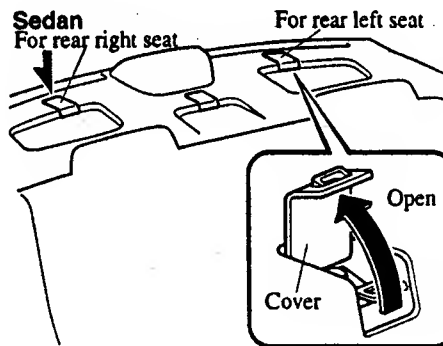


NOTE:

The markings above the LATCH lower anchors indicate the locations of LATCH lower anchors for the attachment of a child-restraint system.

2. Secure the child-restraint system using BOTH LATCH lower anchors, following the child-restraint system manufacturer's instruction.

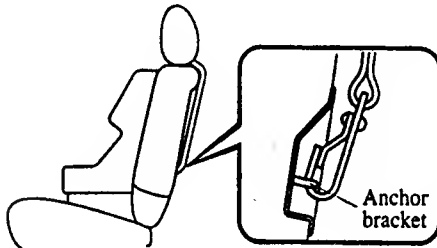
3. If your child-restraint system came equipped with a tether, that probably means it is very important to properly secure the tether for child safety, please carefully follow the child-restraint system manufacturer's instructions when installing tethers.



Essential Safety Equipment

Child Restraint

Hatchback
(Outboard position)



WARNING

Child-Restraint Tether Usage:
Using the tether to secure anything but a child-restraint system is dangerous. This could weaken or damage the tether or tether anchor and result in injury. Use the tether and tether anchor only for a child-restraint system.

Incorrect Positioning of the Tether Strap (Hatchback):

Positioning the tether strap on top of the head restraint is dangerous. In a collision, the head restraint could bend or break. This will cause the strap to loosen. The child-restraint system could move and injure the child or someone else. Always position the tether strap between the head restraint and the seatback.

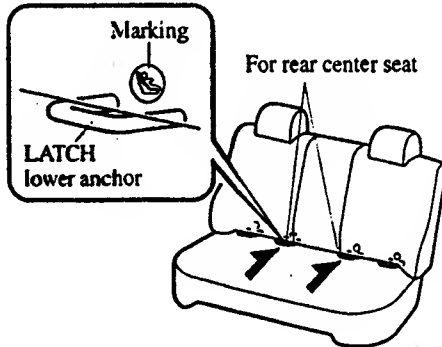
▼ Child-Restraint System Installation Procedure (Rear Center Seat)

The LATCH lower anchors at the center of the rear seat are much further apart than the sets of LATCH lower anchors for child-restraint system installation at other seating positions. Child-restraint systems with rigid LATCH attachments cannot be installed on the center seating position. Some LATCH equipped child-restraint systems can be placed in the center position and will reach the nearest LATCH lower anchors which are 400 mm (15.75 in) apart. LATCH compatible child-restraint systems (with attachments on belt webbing) can be used at this seating position only if the child-restraint system instructions state that the child-restraint system can be installed to LATCH lower anchors that are 400 mm (15.75 in) apart. Do not attach two child-restraint systems to the same LATCH lower anchor. If any child-restraint system has a tether, it must be used also for your child's optimum safety.

Essential Safety Equipment

Child Restraint

1. Expand the area between the seat bottom and the seatback slightly to verify the locations of the LATCH lower anchors.



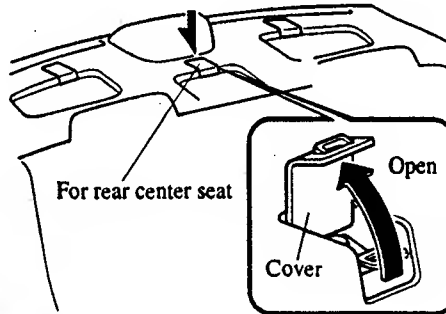
NOTE

The markings above the LATCH lower anchors indicate the locations of LATCH lower anchors for the attachment of a child-restraint system.

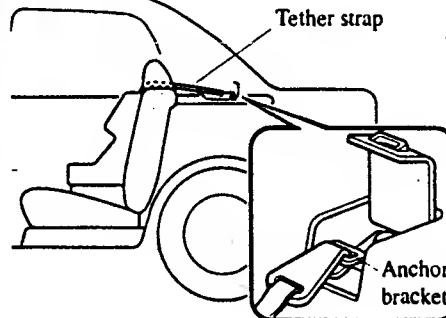
2. Secure the child-restraint system using BOTH LATCH lower anchors, following the child-restraint system manufacturer's instructions.

3. If your child-restraint system came equipped with a tether, that probably means it is very important to properly secure the tether for child safety, please carefully follow the child-restraint system manufacturer's instructions when installing tethers.

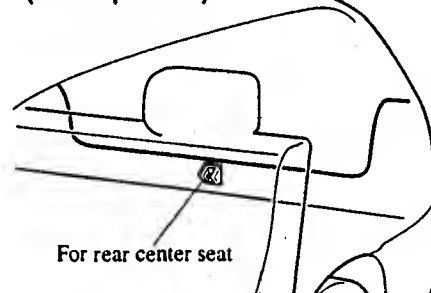
Sedan



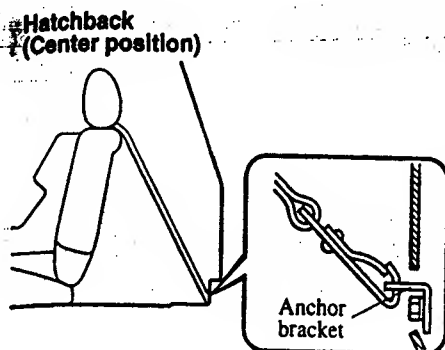
Sedan



Hatchback (Center position)



Essential Safety Equipment
Child Restraint



⚠ WARNING

Child-Restraint Tether Usage:
Using the tether to secure anything but a child-restraint system is dangerous. This could weaken or damage the tether or tether anchor and result in injury. Use the tether and tether anchor only for a child-restraint system.

APPENDIX B
MANUFACTURER'S DATA (OVSC FORM 14)

07/29/2003 07:28 FAX 202 336 3081

OVSC/NVS/221

→ MGA TROY

002

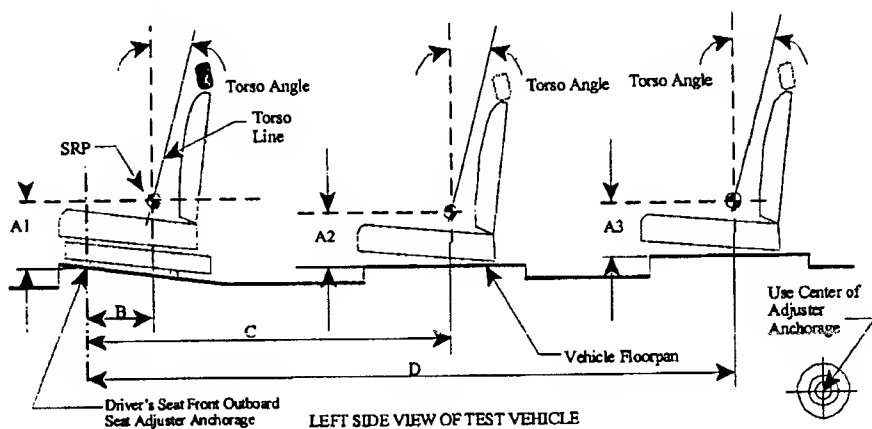
Carol Mislevy - Protege5_form_14[1].doc

Page 1

FORM 14 (Protege5)
Page 1 of 10

SEAT REFERENCE POINT (SRP) AND TORSO ANGLE DATA
FOR FMVSS 225
(All dimensions in mm)

Model Year: 2003; Make: Mazda; Model: Protege5; Body Style: Station Wagon
Seat Style: Front row: bucket; Second row: bench; Third row: N/A



035400

07/29/2003 07:29 FAX 202 338 3081

OVSC/NVS/221

→ MGA TROY

003

Carol Mislevy - Protege5_form_14[1].doc

Page 2

FORM 14 (Protege5)
Page 2 of 10

Table 1. Seating Positions and Torso Angles

		Left (Driver Side)	Center (if any)	Right
A1		(Driver)220	N/A	(Front Passenger)220
A2		100	125	100
A3		N/A	N/A	N/A
B		369	N/A	369
C		1143	1128	1143
D		N/A	N/A	N/A
Torso Angle (degree)	Front Row	18°	N/A	18°
	Second Row	26°	23°	26°
	Third Row	N/A	N/A	N/A

Note: 1. All dimensions are in mm. If not, provide the unit used.

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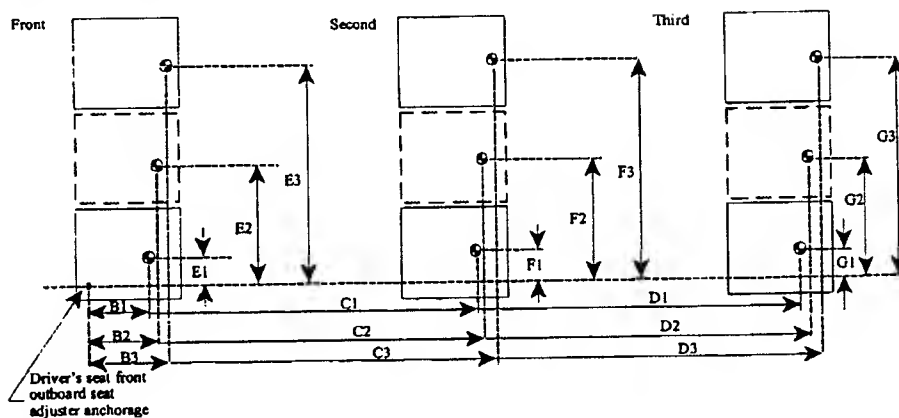
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SEATING REFERENCE POINT
FOR FMVSS 225
(All dimensions in mm)

Model Year: 2003; Make: Mazda; Model: Protege5; Body Style: Station Wagon
Seat Style: Front row: bucket; Second row: bench; Third row: N/A



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Table 2. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SRP)		Distance from Driver's front outboard seat adjuster anchorage ¹
Front Row	B1	369
	E1	246
	B2	N/A
	E2	N/A
	B3	369
	E3	936
Second Row	C1	1143
	F1	271
	C2	1128
	F2	591
	C3	1143
	F3	911
Third Row	D1	N/A
	G1	N/A
	D2	N/A
	G2	N/A
	D3	N/A
	G3	N/A

Note: 1. Use the center of anchorage.

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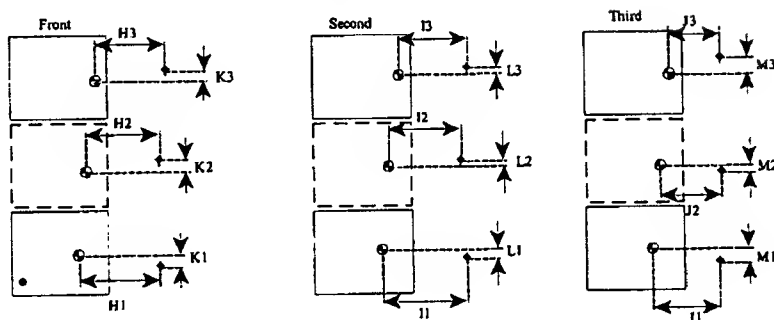
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TETHER ANCHORAGE LOCATIONS
FOR FMVSS 225
(All dimensions in mm)

Model Year: 2003; Make: Mazda; Model: Protege5; Body Style: Station Wagon
Seat Style: Front row: bucket; Second row: bench; Third row: N/A



S: SRP
T: Tether anchorage

Note: 1. The location shall be measured at the center of the bar.

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Table 3. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SRP)	Distance from SRP	
Front Row	H1	N/A
	K1	N/A
	H2	N/A
	K2	N/A
	H3	N/A
	K3	N/A
Second Row	I1	266
	L1	0
	I2	1107
	L2	0
	I3	266
	L3	0
Third Row	J1	N/A
	M1	N/A
	J2	N/A
	M2	N/A
	J3	N/A
	M3	N/A

Note: 1. Use the center of anchorage.

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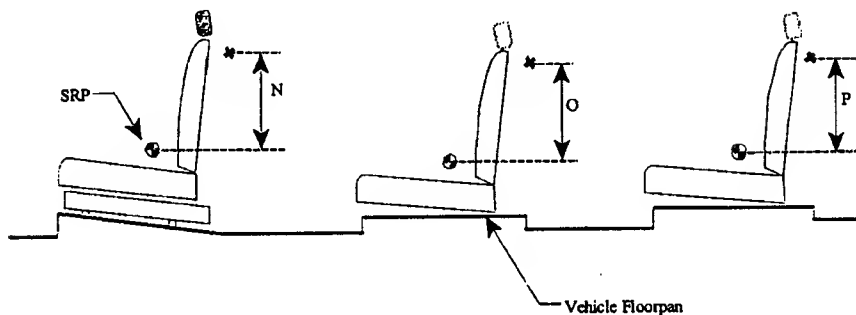
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TETHER ANCHORAGE LOCATIONS - VERTICAL
FOR FMVSS 225
(All dimensions in mm)

Model Year: 2003; Make: Mazda; Model: Protege5; Body Style: Station Wagon
Seat Style: Front row: bucket; Second row: bench; Third row: N/A



LEFT SIDE VIEW OF TEST VEHICLE

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Table 4. Vertical Dimension For The Tether Anchorage

Seating Row	Vertical Distance from Seating Reference Point	
Front Row	N1 (Driver)	N/A
	N2 (Center)	N/A
	N3 (Right)	N/A
Second Row	O1 (Left)	91
	O2 (Center)	1
	O3 (Right)	91
Third Row	P1 (Left)	N/A
	P2 (Center)	N/A
	P3 (Right)	N/A

Note: 1. All dimensions are in mm. If not, provide the unit used.

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Test Procedures Used for Compliance Tests

Tether Anchorages

Seating Location		FMVSS Section(s) - Req.
Front	Driver	N/A
	Center (if any)	N/A
	Right (if any)	N/A
Second	Left	S6.3.4
	Center	S6.3.4
	Right (if any)	S6.3.4
Third	Left	N/A
	Center	N/A
	Right	N/A
Fourth	Left	N/A
	Center	N/A
	Right	N/A

Lower Anchorages

Seating Location		FMVSS Section(s) - Req.
Front	Driver	N/A
	Center (if any)	N/A
	Right (if any)	N/A
Second	Left	S9.4 & S11
	Center	N/A
	Right	S9.4 & S11
Third	Left	N/A
	Center	N/A
	Right	N/A
Fourth	Left	N/A
	Center	N/A
	Right	N/A

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For each anchorage system, provide the following information:

1. **Lower Anchorage Dimensions:** Whether the anchorages are certified with S15.1.2.1 of FMVSS No. 225.
Yes, they are certified with S15.1.2.1.
2. **Lower Anchorage Location:** Whether the anchorages are certified with S15.1.2.2 of FMVSS No. 225. If the anchorages are certified with S15.1.2.2, provide the pitch, roll and yaw angles.
Yes, they are certified with S15.1.2.2.
Pitch: 12.5 degrees, Roll: 0 degree, Yaw: 0 degree
3. **Lower Anchorage Marking and Conspicuity:** Whether the anchorages are certified with S15.4 of FMVSS No. 225. If guidance fixtures are used, provide the location of the seating systems that are equipped with the guidance fixture.
Yes, they are certified with S15.4.
No guidance fixtures are used.
4. **Location of Tether Anchorage:** Applicable section of FMVSS No. 225 for the option used for its certification.
S.6.2.1, Figure 3 to 7
5. **Number of Tether Anchorage:** Applicable section of FMVSS No. 225 for the option used for its certification
S.4.4(a)(2)